DOCUMENT RESUME

ED 477 254 CE 085 041

AUTHOR	Beduwe, Catherine; Planas, Jordi
TITLE	EDEX Educational Expansion and Labour Market: A Comparative Study of Five European Countries--France, Germany, Italy, Spain and the United Kingdom with Special Reference to the United States. CEDEFOP Reference Series.
INSTITUTION	European Centre for the Development of Vocational Training, Thessaloniki (Greece).
REPORT NO	TI-49-02-345-EN-C; No-39
ISBN	ISBN-92-896-0201-5
ISSN	ISSN-1608-7089
PUB DATE	2003-00-00
NOTE	199p.; Final report of a project funded by the 4th Research and Development Framework Programme (RDFP) of the European Union under the Targeted Socio-Economic Research (TSER) program.
AVAILABLE FROM	Bernan Associates, 4611-F Assembly Drive, Lanham, MD 20706-4391 (#3030 EN, 35 Euros). Tel: 800-274-4447 (Toll Free), e-mail: query@bernan.com, Web site: http://www.bernan.com.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC08 Plus Postage.
DESCRIPTORS	Adult Education; *Comparative Education; *Education Work Relationship; Educational Attainment; Educational Demand; *Educational Objectives; Educational Policy; Educational Supply; Educational Trends; *Employment Patterns; Foreign Countries; Labor Force Development; Lifelong Learning; *Outcomes of Education; Postsecondary Education; Secondary Education; *Vocational Education
IDENTIFIERS	*Europe; France; Germany; Impact Studies; Italy; Spain; United Kingdom; United States

ABSTRACT

The long-term economic and social impacts of the rise in levels of education on mechanisms of access to employment and on human resources management were examined in a comparative study of educational expansion and the labor markets of France, Germany, Italy, Spain, and the United Kingdom, with special reference to the United States. Five teams of researchers collected and analyzed national data and synthesized the national studies' findings. Selected conclusions were as follows: (1) education systems must develop their own identities, taking into account the needs of European societies and economies; (2) defining education systems' place in society and creating their identity means striking a balance between managing the link between education's economic and other functions on the one hand and managing the needs and interests of the economy, employers, and individuals on the other hand; and (3) when determining how educational institutions should achieve this balance, policymakers must avoid being dependent on clients/companies governed by the market's temporary economic needs and managing education based on internal and/or academic inertia. (Thirteen tables/figures and 134 references are included. The following items are appended: information about the method used to compare national qualification

Reproductions supplied by EDRS are the best that can be made from the original document.

nomenclatures; explanations of the observed variation, supply, demand, and simultaneous models of analysis; and a discussion of the evolution of qualifications structures among post-1970 generations.) (MN)

Reproductions supplied by EDRS are the best that can be made
from the original document.

CEDEFOP

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
B. Brenner
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
1

ED 477 254

Educational expansion and labour market

A comparative study of five European countries – France, Germany, Italy, Spain and the United Kingdom – with special reference to the United States

CE085041

EN

BEST COPY AVAILABLE

EDEX

Educational expansion and labour market

A comparative study of five European countries - France, Germany, Italy, Spain and the United Kingdom - with special reference to the United States

Catherine Béduwé
Jordi Planas

Cedefop Reference series; 39

Luxembourg: Office for Official Publications of the European Communities, 2003

A great deal of additional information on the European Union is available on the Internet. It can be accessed through the Europa server (http://europa.eu.int).

Cataloguing data can be found at the end of this publication.

Luxembourg:
Office for Official Publications of the European Communities, 2003

ISBN 92-896-0201-5
ISSN 1608-7089

© European Centre for the Development of Vocational Training, 2003
All rights reserved.

Designed by Colibri Ltd. – Greece
Printed in Belgium

4

The **European Centre for the Development of Vocational Training** (Cedefop) is the European Union's reference Centre for vocational education and training. We provide information on and analyses of vocational education and training systems, policies, research and practice. Cedefop was established in 1975 by Council Regulation (EEC) No. 337/75.

Europe 123
GR-570 01 Thessaloniki (Pylea)

Postal address: PO Box 22427
GR-551 02 Thessaloniki

Tel. (30) 23 10 49 01 11, Fax (30) 23 10 49 00 20
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr

Catherine Béduwé
Jordi Planas

Edited by: Cedefop
Manfred Tessaring, *Project manager*

Final report of a project funded
by the 4th Research and Development
Framework Programme (RDFP)
of the European Union.

Published under the responsibility of:
Johan van Rens, *Director*
Stavros Stavrou, *Deputy Director*

Table of contents

SUMMARY 3
PROJECT TEAMS 4

1. RESEARCH AIMS AND METHODOLOGY 5
- 1.1. Background 5
- 1.2. Research aims 8
- 1.3. Research method 11
  - 1.3.1. Methodological decisions: the generation as the key starting point 11
  - 1.3.2. A comparative and multidisciplinary approach 12
  - 1.3.3. Conduct of the work 14
- 1.4. Research hypotheses 14
  - 1.4.1. The nature and origin of the good exchanged in the labour market 15
  - 1.4.2. Skills as the basis for exchange in the labour market 15
  - 1.4.3. Skills as a vector of individual characteristics 16
  - 1.4.4. Skills and job eligibility threshold 17
  - 1.4.5. Skills jointly produced by the systems where they are acquired 18
  - 1.4.6. Qualifications as a factor of skills production 18

2. PROCESS AND RESULTS OF THE RESEARCH 20
- 2.1. Production of qualifications and growth in skills: A comparison of changes in European education systems 20
  - 2.1.1. Comparing national processes leading to educational expansion 21
  - 2.1.2. Factors influencing the expansion process and the rise in levels of education 39
- 2.2. Impact of educational expansion on jobs, remuneration and social position of more highly qualified generations: A comparative analysis 48
  - 2.2.1. The analytical framework 48
  - 2.2.2. The "supply-side effect": A brief outline of the work of the "Qualifications and Labour Markets" network 51
  - 2.2.3. Remuneration for more education 59
  - 2.2.4. Access to management positions by generation 68
  - 2.2.5. Initial conclusions concerning the macro effects of educational expansion 73
- 2.3. Educational expansion, production demand and employers' behaviour 76
  - 2.3.1. Aims and method 76
  - 2.3.2. Educational expansion and employers' behaviour 80
  - 2.3.3. The banking sector: Case study and international comparison 87
  - 2.3.4. Demand for skills and output of persons with qualifications 99
  - 2.3.5. Chapter conclusions 108

3. OUTLOOK FOR THE RELATIONSHIP BETWEEN EDUCATION AND EMPLOYMENT 112
- 3.1. Stabilisation or a continuing rise in levels of education? 112
  - 3.1.1. Study of the data: towards stabilisation of the rate of entry to higher education 113
  - 3.1.2. Elements of uncertainty: Education policies and young people's behaviour 117

3.2. Demand for skills 126
3.2.1. Towards an increased need for skills... 127
3.2.2. ...which is more difficult to meet by recruiting young graduates 128
3.2.3. Tensions and skills output 130
3.3. Towards an increased role for continuing education? 133

4. CONCLUSIONS AND POLICY RECOMMENDATIONS 137
4.1. 40 years of educational expansion in the five project countries 138
4.2. Convergence and divergence between education systems 141
4.3. Irreversibility of educational expansion 143
4.3.1. Educational strategies 145
4.3.2. The symbolic role of education and qualifications 146
4.3.3. Qualifications as a signal in the labour market 147
4.3.4. Education and qualifications as an investment 148
4.4. From consensus on initial education to consensus on skills? 149
4.4.1. Outlook for the behaviour of the different players 150
4.4.2. Towards a greater role for continuing education in the production of skills 153
4.5. The identity of education systems and production of skills for the economy 154
4.5.1. Demand follows supply: Results of a macro-statistical approach based on skills 156
4.5.2. The timescale of skills production 157
4.5.3. The needs of employers and the needs of the economy 159
4.5.4. Strengthening the identities of education systems in response to the needs of the economy 161

5. BIBLIOGRAPHY 163
5.1. Research reports produced within the EDEX framework 163
5.1.1. National reports 163
5.1.2. International reports 165
5.2. General Bibliography 166

6. ANNEXES

1.1. Grid used to compare national qualifications nomenclatures 172
1.2. Qualifications structure of generations studied 173
1.3. Demography of European project countries 176
1.4. Graphs of the German, Spanish and French education systems 177
2.1. Four models 181
2.2. Two ways of reading the supply model 182
2.3. Cumulative table of international results for the supply-side effect 184
2.4. Data and variables used by the countries for salary analysis 185
2.5a. Table of results of earnings function model for education as a whole (DIP) 186
2.5b. Table of results of earnings function model for education broken down (DF and RDP) 186
2.6. Additional work done on the supply-side effect 187
3.1. France: Evolution of educational expansion 189
3.2. Spain: Qualifications structure of generations, population aged 16-65 years. LFS 2000 190
3.3. Germany: Rate of upper secondary completion 190
3.4. Italy: Completion of upper secondary (Maturità) and university entrance 191
3.5. United Kingdom (England): Participation in full-time and part-time post-compulsory education and training, 1979-1999 191

Summary

Between November 1998 and September 2001, LIRHE co-ordinated the EDEX project (Educational Expansion and Labour Markets). This is a European research project conducted under the 4th RDFP (TSER line) in collaboration with British, German, Italian and Spanish teams, together with a U.S. team for certain aspects. The aim was to analyse the long-term consequences of the rise in levels of education on mechanisms of access to employment and on human resources management.

The teams involved in the project were LIRHE in Toulouse, the Centre for Economic Performance (CEP) of the London School of Economics, the Zentrum für Sozialforschung Halle (ZSH), the Centro di Ricerche Economiche e Sociali (CERES) in Rome, the Grup de Recerca Educació i Treball (GRET) in Barcelona, and the Center for Research on Innovation and Society, (C.R.I.S. International) in Santa Barbara.

This LIRHE document contains the final report of the project. It has been compiled from national contributions from the teams and interim synthesis reports produced during the research, all of which may be consulted at the website: http://edex.univ-tlse1.fr/edex/

Four major questions were addressed in succession, taking a comparative approach:

- In each of the countries, what are the processes leading to educational expansion and the production of generations with increasing levels of qualifications? Can the factors influencing these processes be identified?
- How – in macro-economic terms – have these generations with increasing levels of qualifications spread throughout the employment system, and with what returns in terms of salary and social position?
- What has been the impact of an increased supply of graduates on company organisation and human resources management? How is it viewed and used by companies? What links have been established between qualifications (produced) and skills (demanded)?
- From the above results, is it possible to deduce implications for the future evolution of national systems linking education with employment? To what extent are countries converging or diverging?

Project teams

Laboratoire Interdisciplinaire de recherches sur les Ressources Humaines et l'Emploi (LIRHE), Université des Sciences Sociales de Toulouse, France ([1])
Catherine Béduwé
Françoise Dauty
Jean Michel Espinasse
Bernard Fourcade
Jean François Germe (CNAM - Paris)
Pierre Louart
Maurice Ourtau
Gabriel Tahar
Jean Vincens

Centre for Economic Performance, London School of Economics, UK
Hilary Steedman
Christine Bruniaux
Arnaud Chevalier
Anna Vignoles
James Walker

Zentrum für Sozialforschung Halle (ZSH), Germany
Burkart Lutz
Sabine Böchter
Joachim Haas

Centro di Ricerche Economiche e Sociali (CERES), Italy
Luigi Frey
Laura Cavicchia
Antonella Cavicchia
Giuseppe Croce
Alessia De Caterina
Emanuela Ghignoni
Renata Livraghi
Santa Minonne
Gabriella Pappadà
Frederica Sbaraglia

Grup de Recerca Educació i Treball (GRET), Universitat Autònoma Barcelona, Spain
Jordi Planas
Jose Maria Masjuan
Guilhem Salla
Jesus Vivas

Center for Research on Innovation and Society, (C.R.I.S. International), USA
Christoph Buechtemann
Martin Kohler

With the participation of:

European Centre for the Development of Vocational Training (Cedefop), Greece
Manfred Tessaring

---

[1] Louis Mallet, then Director of Lirhe, was responsible for devising this project and submitting it to the 4th RDFP in 1998. Catherine Béduwé (Lirhe) and Jordi Planas (ICE) subsequently took over responsibility for co-ordination.

CHAPTER 1

Research aims and methodology

1.1. Background

All European countries may be said to be experiencing both a rise in the level of general education among the population, resulting in a labour supply possessing an increasing level of qualifications, and economic and technological changes which urgently require new skills. Though these educational and economic developments would appear to go hand in hand, there is no clear link between them. The spread of new generations of employees who are better educated, or have at least spent longer in education, very probably influences productivity, the capacity for innovation and hence the technological development of European economies. In turn, technological advances and increasing competition at the world level mean that for developed countries to remain so they should be able to call on a labour supply that is increasingly skilled, competent, flexible and highly adaptable. This complex state of affairs suggests that there is a close interaction between changes in the supply of education and training, and changes in the demand for new skills. Also, therefore, between the production of qualifications by education and training systems, and the demand for skilled labour among employers. But what is this interaction? More importantly, can it be anticipated? If so, what information is required?

There is widespread agreement in every European country on the need to extend the period spent in initial education. Separate examination of their potential strategies reveals that each group concerned (employers, the State, young people and their families) benefits from such an extension (Béduwé, Espinasse, 1995). Employers gain (more cheaply, it can be argued) a more plentiful labour force that is more highly skilled, and human resources that can adapt more easily and more quickly to economic changes in the market place and the increased demand for flexibility. The State fulfils its role of providing the best possible education and training for workers and citizens, can respond positively to the social demand for education (which often proves cost-effective in political terms), and is in line with the view taken in political circles that education is a factor in economic growth and competitiveness (Buechtemann, Soloff, 1996). Young people, for their part, benefit from obtaining the highest possible qualifications to gain the most advantageous position in the competitive labour market. These three interest groups regard education and training as an important safeguard against skill obsolescence and the uncertainties hanging over long-term developments.

This consensus results in a common strategy of expanding initial education. However, it may reflect interests that are on occasion contradictory. For example, the pressure on wages and salaries resulting from the wider availability of people with qualifications is a potential source of conflict between employers and employees, as is the failure of unskilled individuals to find jobs. Unemployment among young people with qualifications is a setback for governments, which are then accused of poor management of initial education. So far, these conflicts have been contained. Educational expansion has been pursued to date without serious upset in any European country: there has been neither large-scale deskilling, nor a dramatic fall in salaries. Governments have continued to fund education budgets, employers have maintained their investment in the growth of vocational training, and families' demand for education has remained very high.

Thus the slogan "Get educated and everything will be fine" is still current, and a major plank in European policy. It is a commonplace, as the OECD states in its Employment Outlook 1999 (OECD, 1999, p. 135), to stress the fundamental importance of a highly skilled labour force in an increasingly 'globalised' and 'computerised' economy. The training of human capital would appear to be a key factor in the success of companies and national economies. However, the evident merits of education and training are always difficult to prove: "... the same OECD study points out how difficult it is to establish the links between training and competitiveness, particularly since no comparative method of measuring and analysing training effort has been devised" (Gauron, 2000, p. 13). This lack of evidence for the impact of educational investment on economic performance does not, however, suggest that education and training are wasted. Recent commentaries refer indeed rather more to the shortage of skills than to their superabundance or to overeducation. This demonstrates that the issue of how education and training are spread throughout the economy is a complex question needing study and evaluation.

Clearly, mismatches exist: a high level of unemployment has been found even among the most highly educated young people while complaints arise here and there of a lack of skilled workers. These mismatches are more than economic accidents. Buechtemann and Soloff wrote in 1996: "Specifically, the pervasive slowdown in economic growth dynamics since the mid-1970s, persistent high unemployment, growing skills mismatches in the labor market as manifested in widening education-specific wage differentials, and last, but not least, frequent business complaints about shortages in technical and operative workforce skills have raised concerns among policy makers and scholars alike about whether the highly industrialized, high-wage economies are adequately equipped to fully exploit the efficiency advantages and growth potential inherent in new technologies and to meet the intensified competitive challenges arising from global economic integration and the rise of the newly industrialized nations."

It is therefore not enough to provide *mass* high-level education; what is also needed is *good* education and training in order to avoid the problems of either downgrading or overeducation, unsuitability and obsolescence of skills, etc. Above all, the point is not to miss out on the opportunities for enhancement and growth promised by the development of the New Information Technologies merely for want of the appropriate skills. A further requirement – and this is another important aspect – is education and training *for all*, together with awareness of the gap necessarily created by educational expansion between those *with qualifications* (whatever those qualifications may be) and those *with no qualifications*.

The issue of the quantity of qualifications produced and the quality of the education and training provided is compounded by the problem of anticipating education and training needs in the medium and long term. It takes time to train an individual, whatever approach is adopted, while the skill needs to be met are usually immediate. Formal education and training, i.e. training leading to qualifications, cannot be the only response to employers' short-term skills requirements. These two systems evolve according to radically different timescales, which throws into doubt the idea – put forward in the manpower approach – that there is a customer-supplier relationship between the education system and the production system (Planas *et al.*, 2000). Obviously, the education system cannot be asked to take steps to meet needs that do not yet exist. Nonetheless, it is on the basis of what they have learnt at school that future employees must build up their skills, with varying speed and effect. This mismatch between timescales is an important background factor in understanding the relationship between education and employment, and analysing their evolution.

The evidence suggests that lifelong education is helping to raise the level of education, but its effect is still very weak in all the countries studied, and it seldom leads to formal qualifications. It is, however, regarded as a major factor in a return to full employment and the (re)employment of low-skilled workers, both young and older people (Gauron, 2000). It proves far easier and more effective, however, if it can be based on "successful" initial basic education.

Since education appears – overall – to be expanding in line with the needs of the economy, is there some degree of flexible alignment between the two systems? Is the expansion of education, which usually takes the form of a longer time spent in general and vocational education, the right way (the only way?) to prepare the younger generation, the workers of tomorrow, for what will doubtless be ever faster advances in the new technologies, for competitive pressures and changing markets? Does it provide the best response to "global demands in terms of skills (complex interpersonal and organisational relationships, coping with broader contexts, considerable growth in information handling) and flexibility (changes in occupations, blurring of job boundaries, decline in institutional structures in favour of less rigid process systems, careers which have be responsive and change direction)" (Louart 2001, p. 4) – which are the common lot of all our economies?

These contextual factors raise the issue of future social development policy in European education systems, which are committed to extending the period spent in formal education and hence to turning out ever more people with qualifications at ever higher levels. If educational expansion persists, it must match the overall needs of the economy and the market's ability to absorb, at a fair price, the larger quantity of skills that it produces. In other words, there should be no serious imbalance. Is the consensus which seems to have prevailed so far sufficiently stable for cracks not to appear, and if they do, what will be the consequences?

This question is faced by all the European countries where the level of education is rising. Is the answer the same for all these countries? Are governments moving towards a stable consensus or are specific differences emerging? How may this influence the likely changes in the development of education and employment in European countries?

1.2. Research aims

The purpose of the research was to examine the economic and social impact of educational expansion on how the labour market functions. First, the facts were studied by means of a comparative study carried out in five countries of the Union. An analysis was then made of points of similarity and difference in national patterns of development. Finally, an attempt was made to draw conclusions of relevance to the future of the systems relating education to employment. These were the (ambitious) aims guiding the research.

EDEX, Educational Expansion and Labour Markets, is a research programme carried out in parallel in five European countries, France, Germany, Spain, Italy and the United Kingdom (England), as well as in the United States. The latter country was intended to provide a point of comparison on certain aspects (²), since education in that country is governed more by the cost of studying than is the case in Europe. The aim of the research was to arrive at a comparison of national positions in relation to patterns of change – trends – that are common to the various countries, rather than of national situations as such. Educational expansion is, for example, a general phenomenon occurring in all five countries, even though their education and training systems are intrinsically different and their labour markets do not give the same importance to qualifications in recruitment and job mobility. The comparison looked at the way in which each country had set about "producing" this educational expansion by carefully examining similarities and differences at the key stages of development that were common to all the countries (e.g., the age at which compulsory education ends). Once the common factors explaining this expansion had been identified, their relative significance in each country was compared.

Educational expansion was at the heart of the research, not as a focus for examination, but as a key contextual given for the analysis. Once this context had been analysed in each country, the research examined its impact on access to employment by different generations and on recruitment practices and career management within companies. The subject matter of the study was thus the allocation of people to jobs. The question was whether educational expansion affects that allocation and if so, how.

In order to answer this question we chose to proceed in four stages, four complementary ways of addressing the issue.

(a) Stage one was to find a common language in which to speak of educational expansion, and then to link this with the creation of qualifications among those active in the labour market. The work was organised around two main questions: How do European education systems set about expanding education and producing successive generations with ever-higher qualifications? What are, in each of the countries, the processes leading to this, and can the factors influencing this development be identified?

(²) The comparison with the United States relates to two main points, how persons with qualifications are diffused throughout the employment system (the supply-side effect) and employers' behaviour in the banking sector.

(b) Stage two concerned the consequences – in macro-economic terms – of educational expansion from three particular points of view: how persons with qualifications spread throughout the employment system, and how the returns to the possession of qualifications change in terms of salary and social position. The analyses were based on statistical models using national data.

(c) Stage three shifted the level of analysis appreciably, looking at the impact of an increased supply of persons with qualifications on company organisation and human resources management. Surveys were carried out among human resources managers and experts in the different countries, in various sectors of activity. How was the rise in levels of education viewed and used within companies? Was it integrated or not, was it challenged or not, and was it seen as a tactical and strategic opportunity by employers? What links were established between qualifications and skills?

(d) Finally, the last stage sought, using the results of the preceding stages, to arrive at a view of the short and medium-term outlook. What would be the likely effects of the relationship between education and employment on developments in national systems?

Two sorts of timescale run through these questions: on the one hand, the production by systems of formal education and training of successive generations entering the labour market with increasing levels of qualification; on the other, the acquisition of skills by individuals which complement or replace their initial qualifications. Hence, the research links the collective and the individual timescale, historical time and longitudinal time, stock data and panel data. Education systems are extending the period spent in study, particularly in general education, while individuals are starting out on their careers with increasingly substantial academic capital, which they will use to acquire vocational skills.

The individuals who are in the labour market today, forming the current stock of skills, may have been educated up to 40 years ago in education systems which had little in common with those of today. Similarly, any educational decision taken at a given moment which affects the structure and number of persons with qualifications in a particular generation will continue to have an impact on the labour market for the 40 years of active life of that generation. Thus, "40 years of education system history" rub shoulders in the labour market. Every new measure changes the rules of competition between those seeking work in the short, medium and long term, because it alters the relative quantities of persons with qualifications at different levels within the total active population. This also occurs indirectly: individuals with more qualifications will more quickly and easily acquire vocational knowledge at work, and will thus compete with those already in jobs.

In studying educational expansion we find ourselves looking at these two timescales against the background of an increasing pace of change. Technologies are being renewed more and more quickly, individuals are obliged to update and acquire skills at an ever-faster pace in order to keep up with these changes, and companies need to revise their forecasts increasingly often.

Studying the impact of rising levels of education on access to employment raises broader issues than how those with more qualifications find their first jobs. As generations with increasing qualifications spread throughout the employment system, this changes the relative position of everyone in the labour market, and not only among new entrants: there is inter-generational competition for jobs.

1.3. Research method

1.3.1. Methodological decisions: the generation as the key starting point

One aim of the research, which ran through the various stages, was to devise a method that would make it possible to clarify and simplify the issues. From this point of view, the generational approach proved particularly effective in the handling of statistics. It consists in taking a generation, i.e., people born in the same year, as the starting point. Firstly, this makes it possible to follow each generation's progress through education and training from enrolment in primary school to retirement, in the case of those entering the labour market, and thereby to see how and to what extent its (intra-generational) qualifications structure becomes stabilised. Secondly, by comparing generations one with another, it makes it possible to measure educational expansion and the significant (inter-generational) changes taking place in the education system. The generation idea can also be applied to the institutional analysis of trends in education systems, both to qualitative analysis of courses, and to quantitative output in terms of the length of time spent in education and training, and numbers leaving the system with qualifications. Lastly, it enables simultaneous historical and longitudinal analysis.

Moreover, it will be seen that it is a means of linking the production of qualifications by education systems with absorption of skills by the labour market. A person's date of birth is in fact a data item that provides two types of information essential to this study: firstly, it indicates the generation and hence the "state" of the education system experienced. Secondly, age at a given date is an indicator of seniority in the labour market. In all countries, the generation concept allows qualifications and seniority to be linked, these two elements being important for the study of how people are allocated to jobs. The notion of the "state" of the education system is significant in that each generation is not only marked by the system which it has experienced, but also remains so throughout life: leaving university in 2001 does not give the same signal as having left in 1945.

This way of proceeding makes it possible to work on the qualifications structure of a generation – i.e., on the range of levels of general and vocational qualifications – rather than on aggregate human capital indicators of length of study. Educational expansion is studied by way of the pattern of changes in a variety of tracks – general and vocational – at different levels of education (primary, secondary and higher). This means that it is possible to make finer international comparisons and to take greater account of the true situation in the different European education systems. Not all countries have chosen to expand the same segments of their education systems, as is revealed by observation of the structure of levels of qualification.

Another methodological decision was to use national nomenclatures. On the education side, each country worked on the basis of its own hierarchical nomenclature of levels of education, taking into account national educational peculiarities. The final comparison of national patterns of change was made using an ad hoc international nomenclature (cf. Annex 1.1) devised to account for the national nomenclatures and describing the different levels of education. On the employment side, each country also worked with its own occupational nomenclature, thus guaranteeing consistency in the pairing of Level of Qualifications with Category of Employment, which is the bedrock of the entire research.

It should be pointed out finally that this project called for both quantitative and qualitative research to be carried out, and for the balancing of these two types of result, which is something of a rarity.

1.3.2. A comparative and multidisciplinary approach

The research is both multidisciplinary and comparative. The multidisciplinary aspect, which derives from the make-up of the teams, reflects the issues particular to the different stages. The stage devoted to the education system required participation by specialists in the study of education systems, sociologists and economists. The second called for statisticians specialising in the relationship between education and employment, and the third for human resources managers and experts in that field, as well as for sociologists and labour economists. In the outlook stage, each specialist sought to use his or her expertise to look into the future. Participation by all in all stages allowed for cross-fertilisation of approaches and discussion of the various perceptions peculiar to each discipline.

Comparison between the different countries was a major feature of the research. As has already been pointed out, we did not set out to compare the changes described by the different countries term by term, nor the structures of their education systems, nor their nomenclatures of qualifications and occupations, nor yet the grids used in their classification systems. For each stage of the research, however, we did try to tease out a bundle of explanations based on the national analyses produced, to which the five countries then related their own positions. This required an attempt at mutual understanding of the various education systems, of how the national labour markets operate, of the status of formal qualifications, and of their economic and social roles. On the basis of this minimum of common culture, we were able to compare the differences in behaviour of educational institutions, individuals and employers in each country with their general models. EDEX often found that different national processes led to similar patterns of change. Educational expansion is a good example: countries that were less advanced in 1940 "did not catch up in level of education by imitating the countries that were more advanced at the start of the period. In education, each country followed its own particular route" (Vincens, 2001).

This task of familiarisation with different national circumstances was a major part of the research, an individual task to which we feel we should call attention. The learning involved was one of the extremely positive aspects of such a project, enabling the researchers to escape from their national models of thinking and to benefit from others'. It will have repercussions on our research work long after EDEX is finished.

It is obvious that as time goes on, the distance gained from some of the results assists in their considered interpretation. The chronology of the research means that the first stage, dealing with the processes leading to educational expansion, was formally completed two years ago. It has therefore benefited from the ideas which have arisen from the other stages, as is evident from the "secondary" publications that have already appeared. Similarly, some of the macro-economic results (the supply-side effect) were obtained during earlier work by the network (Béduwé, Espinasse, 1995 and 1996, Mallet *et al.*, 1997, Béduwé, Giret, 1999), which made it possible to spend longer thinking about how to interpret them. The work based on surveys carried out in companies, on the other hand, was finished recently, and the resultant comparisons could well be further developed and expanded. And the task of looking forward, at which the research has drawn breath, is still being completed.

1.3.3. Conduct of the work

The four stages totally governed the structure of the work. Each stage was subject to its own methodological decisions, but these were reached jointly by the teams. The work involved in the different stages was carried out successively, but was synchronised between the five teams. Each stage was carried out by the five teams, and – reciprocally – the members of each team participated in all the four stages. Lastly, each stage led to the production of national reports and then to a synthesis report comparing national results. For the sake of international comparability, overall responsibility for the research and the preparation of the synthesis report for each stage was in the hands of a member of the French team, who acted as co-ordinator, together with a member of a partner team.

The research is therefore harmonised in that the teams sought to answer the same questions using common analytical grids, but it was also decentralised, allowing a considerable degree of freedom to the teams as to how they produced their results. This arrangement both respected national variations on a common theme, and allowed the aim of comparison to be achieved.

This report sets out to put into perspective the total results achieved over the three years of research. It borrows heavily from the national reports, and especially from the synthesis reports, by seeking to extract from them the most significant answers. It stresses the similarities found between the different countries. The national answers to the EDEX questions are given in detail in the national reports.

1.4. Research hypotheses

The research stages were not similar in nature, either in terms of the type of information that they generated (statistical data, company surveys), or in the time frames which they examined (the past in the case of the first two, the present in the third, and the future in the last), or in the theoretical tools used to interpret the results (economics/sociology of education, macro-economics, human resources management and labour economics). What they all had in common was that they dealt with the good exchanged in the labour market, and the impact of increased output of education on the nature and origin of that good.

1.4.1. The nature and origin of the good exchanged in the labour market

In many macro-economic studies (Plassard, Pluchard, 1998, Tessaring 1998, Hartog, 1999) individuals' human capital is habitually identified with their qualifications or number of years of study, and thereby refers solely to the formal initial and post-initial education and training produced by the education system.

Instead, we started from the concept of skills, which is closer to sociological, micro-economic and management theories. We were thus able to accommodate individuals' own definitions of human capital, which is derived from how it is used at the work place, and to recognise non-academic learning, notably that achieved through work experience and social activities. Putting the concept of skills at the heart of the relationship between education and employment was not merely a working hypothesis running through the different stages of the research but a golden thread guiding the way in which we worked.

Educational expansion takes the form of longer periods spent by each individual in education, with the result that succeeding generations acquire ever-higher qualifications. The rising level of education is thus, at first sight at least, an issue of qualifications, and even an issue of the quantity of qualifications produced. But a study of how this constantly growing output of qualifications is taken up by the economy only makes sense if it is related to the needs of the economy, which are expressed essentially in terms of skills. Therefore, as the notion of skills is the true basis for exchange in the labour market, the research had to link educational output with the need for, and production of, skills.

1.4.2. Skills as the basis for exchange in the labour market

An individual is suited to a job if he or she has the requisite skills, that is, if he or she possesses a set of characteristics specific to him or her which attest and govern his or her productive capacity in a given context (qualifications, work experience, interpersonal skills, learning skills, adaptability, etc.) (Lancaster 1966, cited by Planas *et al.*, 2000). In return, an employer chooses between several individuals according to a set of criteria, including qualifications or level of qualifications, but this is far from being the only consideration. Work experience is also a crucial factor.

Our aim was not to suggest a precise, exhaustive international definition of skills, or a final agreed definition. Nor did we intend to adopt some definition commonly used in the discourse. We put forward a number of key aspects of the concept, which we felt to be relevant to the research and had been developed by members of the network (Planas *et al.*, 2000). Skills have four features which we believed to be commonly agreed: they are vectoral, they are acquired in a variety of ways and places, their value is specific to each job or working situation, and they cannot be measured ex ante.

One immediate consequence of this approach was that it accommodated national differences in educational arrangements and in the part played by qualifications in access to employment, within a concept that transcended institutional frameworks for analysis of the relationship between education and employment: one and the same type of skill may be acquired and certified differently from one country to another, and one generation to another. In all countries, therefore, ages and qualifications may vary within a single category of occupation.

Taking this as the basic hypothesis for the research meant taking the fundamental decision that people's productive capacity cannot be described in one-dimensional terms; more specifically, that it cannot be reduced to, or encapsulated by, formal qualifications or some human capital indicator based on years of study. Studying how people are allocated to jobs means analysing the relationship between individual skills and employment, a relationship which cannot be reduced to that between qualifications and employment. The notion is far more complex, and complicates the study of the relationship between production and consumption of knowledge and skills.

1.4.3. Skills as a vector of individual characteristics

An individual's overall skills (or competences, to use the French terminology) are vectoral, comprising a series of basic skills (knowledge, practical abilities, life skills). Each individual possesses a vector specific to him or her, which is probably unique if defined in sufficient detail. It cannot be expressed solely in terms of qualifications.

If skills are seen as a vector of individual characteristics, this means that they can be acquired in different ways, and in a variety of places. Each element of the vector may be acquired through different channels. It may be acquired through formal education and training (qualifications), through implicit education (experience, on-the-job training, learning by doing, etc.), through non-occupational social activities, or it may even be innate (or acquired very early on through primary socialisation). All elements may be acquired in any way, but there are easier, more natural and more likely ways of acquiring some of them, depending on how the education system is organised. Some skills may indeed be acquired through an alternative channel, by some combination of these methods. One and the same level of overall skills may thus be acquired in a variety of ways, and may be possessed by individuals with different educational and occupational histories. These differences may relate to when certain skills were acquired (when first starting work, or during the career), to how they were acquired (non-formal or formal education and training), to the time taken to acquire them, and of course to the broader economic circumstances of different generations' careers.

As a general rule, workers do not use all the skills that they possess in any one job. Skills are of value in specific jobs, and even in specific working situations. Individual skills will be used as called for by the working situation.

There is no intrinsic (absolute) set of skills. Whether skills are relevant (productive) will depend on the circumstances in which the job is performed. Some authors, such as de Terssac, even doubt the real existence of individual skills, or at least that these can take material form outside a collective context.

Lastly, the vectoral dimension of skills, the combined value of the component elements, and the multiplicity of working situations in which they are exercised, make it very difficult to determine productive performance ex ante. In any recruitment process, the employer will primarily be looking for signals of applicants' potential productivity. Some of this information is supplied by qualifications (Arrow, 1973), which serve as an imperfect measure of productive ability. Examination of the various skills possessed by an individual would, however, provide a far more reliable "signal" (in the sense of Spence, 1974) of individuals' productivity (in any particular job). The recruiter faces a two-fold task. On the one hand, the individual's skills need to be identified, and on the other, they have to be matched to a level of potential productivity in each job.

1.4.4. Skills and job eligibility threshold

If this approach is taken, occasions may arise when some skills can take the place of others, with the result that the individuals concerned will be equally suitable for a given job. This leads to the suggestion of the notion of eligibility for employment in a given job (Béduwé, Espinasse 1995a), which was used throughout the research: an individual is eligible for a given job if he or she is competent to carry it out, i.e., has skills which reveal his or her productive ability (or the likelihood that this exists). Those eligible form the virtual supply for a given job. All the individuals possessing the requisite skills are eligible for the job, although these may have been acquired through different educational and employment histories. This leads us to postulate that competition for jobs is not intra-generational but inter-generational. Individuals from different generations, who may have been educated in systems and contexts where educational decisions differed, and who may have qualifications of different levels, can carry out the same job with similar levels of productivity. In such cases, one person's longer period of study leading to a high level of qualifications may substitute for another's work experience accumulated on the basis of lower qualifications.

It is thus seen that the issue of rising levels of education affects the entire labour market. It is not merely a question of finding a first job, and it is not restricted to the market for entrants. Educational expansion takes the form of entry into active life by new generations, each of which is better educated than the last and certainly has more qualifications. This expansion does not alter the relative positions of young people among themselves, but by redefining conditions of eligibility, it redefines the population that is eligible for every job.

1.4.5. Skills jointly produced by the systems where they are acquired

Schools and institutions of initial and continuing education are the key places to acquire skills which can only be learnt through formal education and training. These institutions may also play a major part in governing later learning. On the other hand, some skills are the reserve of employment – they can only be acquired in real working situations. In reality, skills may be acquired through either form of learning, at different times of life and over different periods, varying from one individual to another. Overall sets of skills can thus be said to be jointly produced by different systems (school, employment, family, society), regardless of whether there is any collaboration between them. Companies are important places for the acquisition of skills by the individual, but they also amount to a system for the production of skills, both in their own behalf and in that of the market.

1.4.6. Qualifications as a factor of skills production

Throughout their active lives, individuals will update their stock of knowledge and will expand or modify their "initial" skills as they move from one job to another. Qualifications, usually acquired at the start of active life, are one of the key initial factors if only because they may govern access to certain types of job – or certain types of learning – and hence to certain occupational experience. The benefit of applying Lancaster's (1966) producer/consumer model is that it provides a dynamic individual explanation of skills production: knowledge is regarded as a contributing factor. Initial qualifications may, in certain cases and in certain countries, prove to be an absolutely crucial factor (for access to the regulated professions, for example).

In return, companies generate the skills which they need to meet their goals. The various types of knowledge contribute to skills production (learning by doing, general transferable knowledge, technical skills, etc.). This process may be modified by learning at the workplace, by continuing education and training, and/or drawing on initial education in the form of qualifications. In order to meet their needs for skills, employers thus have a range of possible options or strategies. Drawing on initial education is one; others are promotion through the internal market and recruitment from competitors. The costs of these options differ.

What effect does educational expansion have on skills production within the company? Overall, educational expansion modifies one of the factors contributing to it by adding more qualifications – more people with qualifications – to the organisation. Being more highly qualified, these individuals more quickly produce skills, and in different ways, and they adapt more swiftly to new technological challenges. Individuals with higher qualifications are more adaptable. In a model where educational institutions and companies jointly produce skills, the expansion of formal education has repercussions both on the time taken to adjust skill needs, and on the cost of "manufacturing" skills.

CHAPTER 2

Process and results of the research

2.1. Production of qualifications and growth in skills: a comparison of changes in European education systems (³)

Educational expansion is a constant concern, if not a priority, of European governments. To these governments, it is a prerequisite if they are to ensure economic growth and to respect the fundamental democratic right to knowledge, and hence to equal access to education.(⁴) In recent years, it has also been one of the institutional responses to unemployment, especially where this particularly affects young people as in France, Spain or Italy. The size of education budgets in European countries generally provides evidence of the desire to put these principles into practice. What educational changes have been made in consequence?

Everywhere, educational expansion means longer periods spent in education. Whatever the arrangements made nationally, it leads to increased output of qualifications, degrees, diplomas and certificates and – in brief – to a short, medium and long-term growth in social and vocational skills, either acquired or potential. In EDEX we were solely interested in the "production of qualifications" aspect of educational expansion, without forming an opinion as to the level of the knowledge acquired.(⁵)

We felt it important, as a background to the EDEX research, to start by examining the educational changes under way in each country. It was an accepted fact that the level of education had continued to rise in all European countries because of the longer time spent at school. But had this phenomenon occurred in the same way everywhere, to the same degree and

---

(³) This chapter summarises the synthesis report prepared by H. Steedman and J. Vincens from the national reports (*cf.* Bibliography). On occasion, we quote lengthy extracts.

(⁴) This proves a challenge in the case of France: "there are still serious social inequalities in schooling; nonetheless, they have been lower for some decades both as a result of the longer period generally spent studying and in qualitative terms" (i.e. a narrowing of the gap between the educational outcomes of young people from different social backgrounds) (Thélot, Vallet, 2000, p. 31).

(⁵) This is obviously a separate issue. In France, Joutard and Thélot (1999) demonstrate that level of knowledge associated with level of study has not fallen.

at the same pace? If not, how could the differences be accounted for? This first stage thus had a double aim: (1) to compare the national processes leading to educational expansion, and (2) to identify the factors influencing those processes and their respective significance in each country.

We shall use the term education system to mean all institutions and establishments providing education and training leading to nationally recognised qualifications and certificates in the form of initial and/or continuing education. These institutions are not necessarily run by the State. In Germany and the United Kingdom, employers play a key role in organising vocational training and in awarding qualifications. In each country, however, there is a minimum of internal coherence in the organisation of education and training as a result of the interdependence between the different types of learning and the sole responsibility of the State for compulsory education. It is thus possible to think in terms of a system.

This very broad definition of the education system results from the initial decision in this research concerning the evolution and changes that have taken place in the *qualifications structure* of the active population. The qualifications awarded through continuing education, which may raise an individual's level of qualifications, are taken into account. But this impact is relatively weak in all countries (*cf.* paragraph 1.1 below), which means that the definition of the education system adopted in this research is in effect largely reduced to the system of initial education.

2.1.1. Comparing national processes leading to educational expansion

Educational expansion is a phenomenon resulting from complex economic and social forces. We feel that the term "process" summarises well the notion of multiple causes that interact and are constantly changing, and are linked to the economic and social histories of the countries which are moving towards expanding education. The aim of this chapter is to describe the outcome of these national processes in an attempt to identify and define the common factors leading to expansion.

"Each education and initial training system performs a particular social function, and is the product of a the country's social, economic and political environment. The nature of the knowledge dispensed, the emphasis placed on preparing pupils for the realities of the working world, and the proximity of the training content and job expertise are all factors differentiating national educational systems" (Cedefop, 2001, p. 21). Whatever their differences, these systems all produce certificates, degrees and qualifications which are the main justification for the discrimination affecting employment, occupational classification, wages and salaries, and indeed, in some countries, entire careers.

All national systems also keep producing more and more qualifications over the years, giving each generation increasing levels of qualifications and leading to the educational expansion observed in European countries. We decided to compare the processes which have led them to do this, while acknowledging and taking into account their diversity.

At a statistical level, educational expansion is reflected in a number of findings, all of them linked in a more or less explicit manner. Some can be measured with the help of national statistics: increased participation by young people in various types of education and training (academic courses, apprenticeships), particularly full-time (UK), longer periods spent in school education and in training, a rise in the number of people with qualifications at the end of initial education, and an expansion in continuing education. Others are less easily quantifiable: development of talents, aptitudes, abilities, social skills, and so forth. In this chapter, and more generally in EDEX, we only consider qualifications acquired through formal education and training, i.e., those leading to the award of a nationally recognised qualification. As has been stated already, we are only concerned with the highest level of qualification achieved, hypothesising that the knowledge thus certified has remained the same over time.

Each country used its national nomenclature for qualifications, the nature of this (national/regional, general/vocational, level/specialisation, etc.) and the degree of detail being governed by national decisions and depending on the national context. The only constraint was that the nomenclature should be arranged hierarchically in levels, the highest qualification requiring the longest period of study. Every individual was grouped by the highest level of qualification gained according to this nomenclature. Lastly, the nomenclature had to be usable over the entire period under examination, i.e. from 1945 to the present.

2.1.1.1. *Educational expansion in initial education and training*

We chose to use the generational approach in order to link the historical aspect of educational expansion (the evolution of education systems) with the experience of each generation within the system (the acquisition of skills).

The basic idea is simple: individuals born in the same year go through the "same" education system, that is, they have the same (structural) opportunities to study and to enter active life. The qualifications they obtain are typical of the architecture of the education system at that time. Once each generation has entered the labour market, it will then be faced with the "same" system of continuing education and training, which will evolve, and may expand, in the same way and at the same time for all individuals of that generation. Each generation will thus have its own qualifications structure: first by going through the initial education and training system, and then by gaining additional qualifications through continuing education and training.

A difficulty obviously arises from the fact that while the system is constantly changing, each generation will take between 15 and 25 years to go through it. Nothing is fixed; the notion of the "state" of the education system is relative. In order to arrive at somewhat "fixed" periods, we examined the educational experience and qualifications structure of generations spaced at ten-year intervals, born around 1940, 1950, 1960 and 1970.(6)

Two types of analysis then became possible: monitoring the qualifications structure of each generation (intra-generational analysis) over time and comparing one generation with another (inter-generational analysis). The first showed the respective roles of initial and continuing education systems in awarding qualifications throughout the lifetime of a generation. The second provided a precise evaluation of the rise in the level of education via the evolution of the different types of qualification held by successive generations.

The period of observation of education systems extends from 1945 to the present, which means that the generations born between 1935 and 1985 had to be treated in general terms. The 1935 generation, now aged 65 years, experienced the post-war education system and is now retiring or retired; its broad educational and employment history is known. The generation born in 1985 has reached the age when it is finishing compulsory education and entering upper secondary education; the majority will go on to higher education in the 2000s and will enter the labour market in 2005-2010, but next to nothing is known as yet about its experience of education and employment, except about compulsory education, although it is the first

---

(6) This approach differs from traditional analyses of the production of qualifications. These are often based on the notion of "leavers" from the education system, which is better able to describe effectively the output of initial education in the strict sense, i.e., before entry into active life. A cohort of "leavers" is formed of young people of 10 different generations. The time when a young person leaves compulsory education may differ by some 10 years from the time when a young person, of the same generation, completes a PhD, while a young person with no qualifications is likely to return to (post-initial or continuing) education during those 10 years. Using the notion of generation thus broadens the field of initial education to include the education and training that a young person is likely to pursue in the few years following the end of schooling. This drawback is largely offset, in the context of international research, by the fact that the notion of generation makes it possible to allow for the problem of work during (initial) study, which may be treated as entry into active life in some countries such as the United Kingdom, Italy and, of course, Germany. In EDEX, the notion of initial education thus includes that of post-initial education, provided that it takes place before an individual reaches 30 years of age.

BEST COPY AVAILABLE

generation for which it is possible to make medium-term forecasts. The 1975 generation, now aged 25 years, experienced post-compulsory education in the 1990s, and entered the labour market in the years 1990-2000. It is the last generation whose qualifications structure, at least initial qualifications structure, is known with any certainty.

Intra-generational analysis has shown that a generation acquires the essentials of its qualifications before the age of 30 years, through initial education or during the early years after leaving initial education. This holds true in all the European countries studied, but there are slight differences: Italy is the country furthest removed from this general model since all the students combining study and work are late in gaining their university degrees. The absence of any intermediate certificate between the qualification permitting entry to university and the *laurea* awarded after five years of university reinforces this phenomenon. In Germany, a proportion gain the titles of *Meister* and *Techniker* through continuing education during working life, but this is marginal compared with the qualifications gained before the age of 30 years through initial education. In other words, the qualifications structure of a generation stabilises at around the age of 30 years and remains practically unchanged throughout life.

Hence, lifelong education has no significant impact – for the time being – on the award of qualifications to the active populations of France, Spain, the United Kingdom or, with subtle differences, Germany or Italy. The rise in the number of people with qualifications within the active population takes place largely as one generation replaces another. Generations with more qualifications take the place of less highly educated generations as these retire, and it is this mechanism which is more or less the only means by which the average level of qualifications of the active population rises. This rise gradually spreads throughout the population: each new type of qualification will spread over 40 years (the duration of active life) as the first generation holding that new qualification ages.

This phenomenon illustrates the crucial importance of initial education systems in the production of the qualifications present in the labour market, and hence in the expansion of education. This outcome fits neatly with the notion that initial education is of vital importance in the acquisition of human capital throughout life, and that investment in post-initial education (continuing education, apprenticeships, learning by experience) complements rather than replaces initial education. "The social environment, and psychological and biological factors combine so that initial education is an irreversible investment in human capital, the absence of which may be a serious factor in exclusion" (Planas, Plassard, 2000, p.11).

2.1.1.2. *Comparative evolution of the various categories of qualifications from one generation to another*

All the education systems of the countries participating in the project revolve around three main stages (sectors of education): compulsory education, post-compulsory education and higher education. These stages generally end with a choice of options: further study (and if so, of what), or exit into active life. In the 40 years from 1950 to 1990, changes took place in each of these three stages, altering the options. The generations born between 1940 and 1980 remained for longer and longer periods within the educational pipeline, appreciably increasing the flow passing through each stage and finally leaving at increasingly higher levels of the system.

The ways in which these systems evolved were compared in terms of the changes to these three stages. It was therefore necessary to study simultaneously the output of the systems at each of the three stages (those leaving the system) and the way in which they operated, i.e., the processes giving rise to that output (the flow passing through each stage). A combination of stock data (the stock of qualifications within a generation) and flow data (behaviour in terms of further study versus leaving at each level) was needed for an understanding of the different pathways within the systems which, over time and in each country, had given rise to the stock of qualifications found in the active population.

2.1.1.2.1. Basic data and method

From the results found in Chapter 1.1 it can be stated that the structure of an active population by level of qualifications and age group (7) very accurately mirrors the way in which the output of education systems has evolved over time. It is sufficient to look, for example, at the active population in 2000, to find in it the evidence, in terms of qualifications awarded, of the education policies conducted since 1945 among the generations born between 1940 and 1980. The generation born in 1970 which is now 30 years of age is the last among which the qualifications structure may be regarded as stabilised (Annex 1.2). Analysis of the qualifications structure of the generations born since 1970 is a matter of projection into the future (Chapter 4).

The stock of active persons with qualifications found in the different generations present in the labour market results from the flow of pupils and students passing through each level of the education system and choosing, at each level, between stopping their education and entering the labour market, and continuing to study at the level above. Depending on the education system, one or the other of these options will take precedence. An original graphic technique was devised, tracing the educational careers of four successive generations at 10-year intervals, 1940-1950-1960 and 1970, in each country. The graphs show the flow through the different option stages of the system and the exit flow into the labour market. These graphs might be likened to the "progressive distillation of the generation in the various pipes of the educational refinery". The grid, which is common to the five countries, provides a basis for the analysis of flow changes due to changes in pupil behaviour over the generations in relation to the structural evolution of the system (cf. Annex 1.4).

---

(7) Certain countries (UK, Italy, Germany) which did not have sufficiently reliable detailed age data used groups of 5 generations.

Two types of information were obtained for each country: structure by level of qualifications of the generations born between 1940 and 1970 (from employment surveys, Labour Force Surveys, etc.) and the careers of these generations within the system as it was when they experienced it (government statistics). The analyses produced proved extremely interesting at a comparative level.

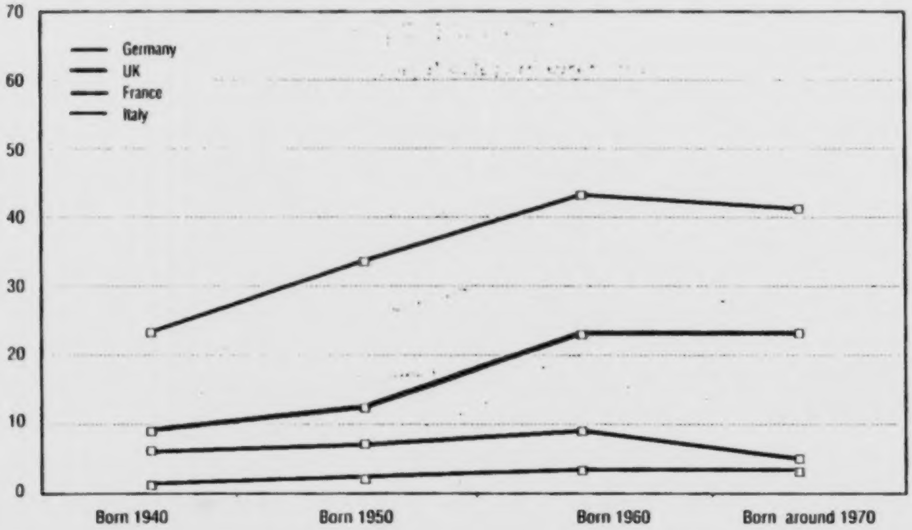
When the work was finished in each country, the national nomenclatures were transcribed on to an international grid of six levels of qualifications (Annex 1.1) so as to "show up" the comparative evolutions. This grid provides a finer classification than the version of ISCED, the International Standard Classification of Education, which has been in use to date. The same four generations, 1940-1950-1960-1970 born at 10-year intervals, serve as a point of comparison between the five countries.

2.1.1.2.2. Generalised extension of compulsory education

The progressive rise in the age at which compulsory education ends is a feature that is common to all the countries. In all of them, the age of the end of compulsory education has moved from 14 years in the 1940s to 15 or 16 years today. This decision, taken by the countries at different dates, is a factor in the expansion of education since it strengthens general basic education by extending its duration and has been accompanied everywhere by an effort to enable a large proportion of children to acquire a basic qualification (Graph 1).

Furthermore, it has put back the age at which pupils leave and enter the world of work to higher ages, and therefore to greater maturity. The end of compulsory education has thus drawn appreciably closer to the age of entry into higher education. All these factors have contributed to the significant fall in the proportion of individuals with "no qualifications" within each generation, in all countries (Graph 2).

Graph 1. **Lower secondary qualifications** (cat. 2)



Evolution of the proportion of each generation of working age only possessing a lower secondary qualification (cat. 2)

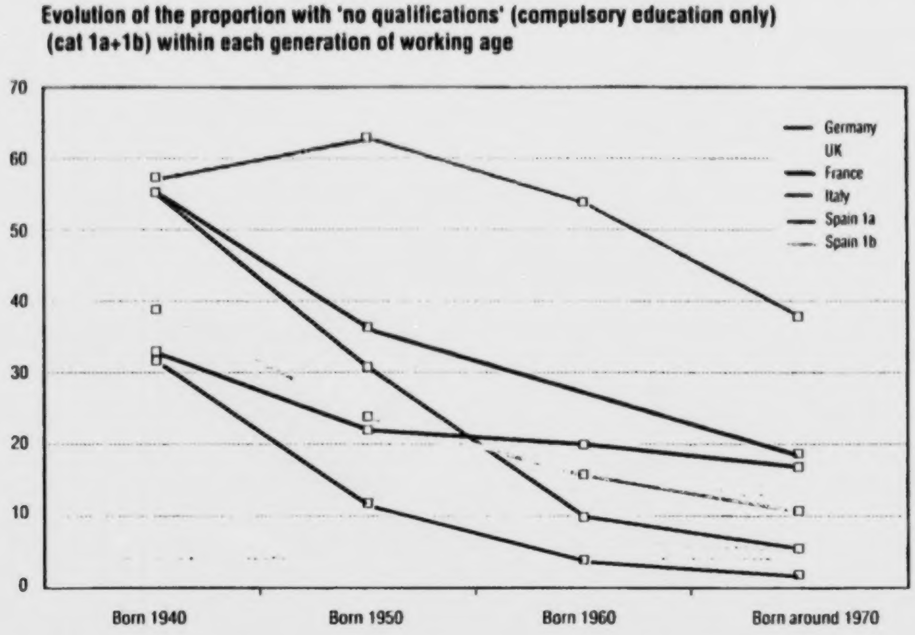
Cat. 2 comprises: in the UK O-level, CSE and GCSE; in France BEPC; in Germany Realschule, Fachhochschulreife and *Abitur* (without vocational education qualifications, which are extremely rare); in Italy Scuola Media certificates; and in Spain Bachillerato Elemental and the upper cycle of EGB (Annex 1.1).

First-level certificates of lower secondary education (8) (cat. 2) are awarded, in all the countries represented, at the end of compulsory education. They may be regarded as a qualification permitting advance towards post-secondary education. The changes in the proportion of qualifications at this level provide evidence of the choices made by successive generations in the five countries between further post-secondary education and leaving education for the labour market. In Italy and the United Kingdom, until the 1970s and '80s, a substantial and growing proportion of young people finished their education at the level where they could – theoretically – have continued (although the selectivity of the examination at that level in the UK, O-level and then GCSE, which was a requirement for upper secondary education, appeared very dissuasive). The slight slowdown observed in the 1960 generation and after corresponds to a shift in behaviour towards further study. On the other hand, in France (BEPC) and Germany (*Hauptschule*), this level has never been a point at which pupils have really left the education system.

---

(8) The Spanish data do not make it possible to distinguish this level of qualifications within the active population. Spain is therefore not included in this graph.

Graph 2. **Those with "no qualifications"** (cat. 1a + cat. 1b)



Cat. 1a comprises: in the UK 'no qualifications'; in France 'sans diplôme'; in Italy primary school certificate and 'no qualifications' (grouped together in the statistics); in Germany 'no qualifications' including no reply (relatively numerous from 1991, see Haas/Lutz 1999); and in Spain 'sin estudios'.
Cat. 1b comprises: in France CEP; in Spain Primaris; and in Germany Hauptschule without vocational education certificate.

One immediate consequence of the growth in lower secondary qualifications (cat. 2), is that the 'no qualifications' category has fallen sharply over the generations in the five countries. The proportion of 'no qualifications' among the 1938 generation differed greatly between countries, ranging from 33% in Germany to 90% in Spain. In 30 years, this proportion has converged towards rates below 20% in all countries (including Spain if the 'sin estudios' (1a) category is considered rather than the 'primaris' (1b)). It is in this category, the lowest, that the widest variation is found between countries at the beginning of the period, and the narrowest at the end. If there is a general trend in education among the countries, it is seen most clearly in the absolute fall in those with 'no qualifications'.

This extension of compulsory education has been reflected, except in Germany, which has retained its three tracks of general education, in a trend towards homogenisation of the institutions of compulsory education. The first choice between options, which was made at 11 years of age in 1945, three years before the end of compulsory education, has gradually moved to 14,

BEST COPY AVAILABLE

15 or 16 years of age, after the end of compulsory education. Differentiation within generations thus occurs far later in the education system. France has taken the process the furthest, establishing the *collège unique* in the 1970s in the aim of giving all young people the same education up to the age of 15 years. In the other countries, the idea has been rather to allow everyone to benefit from longer general compulsory education so that they have the time to reveal their abilities, thus reducing obstacles due to social origins or resources.

Nonetheless, this stage of the education process "is both a cycle of study and a selection stage, even though this is not officially admitted in all countries" (Vincens, 2001). In fact, pupils are evaluated everywhere on the basis of academic criteria, and this serves, in one way or another, to sort the cohort into those who are capable of pursuing secondary general studies and those who are to take vocational courses, either in school or via apprenticeships. Even in Germany, where vocational education is widely recognised and respected (around 70% of each generation still enter into apprenticeships today, 60% leaving with a dual qualification, and 10% going on to train as *Meister, Techniker* or to higher education), the qualification gained in general education increasingly serves as a selection tool for entry to the most sought-after apprenticeships. In the UK, despite attempts to encourage more young people to acquire a lower secondary qualification (O-level or GCSE), selection remains strong, and barely 50% of a generation achieve marks sufficient to go on to upper secondary education.

The extension of compulsory education was born of an obvious desire for greater social equity and a concern to promote equality of opportunity between children from all social backgrounds, and it has therefore been accompanied by a strong idea of meritocracy. This has, however, far from eradicated the social differences that have a traditional correlation with academic results from the moment of enrolment in primary school.

2.1.1.2.3. After compulsory education and lower secondary school

(a) The main educational differentiation within a generation thus occurs after compulsory education. The form it takes is specific to each country and depends on society's view of the role of education, particularly of its economic role. The State and employers are chiefly responsible for post-compulsory education and training. The State plays a key role in academic and general education, and employers take on some – sometimes a major part – of vocational education. Tasks are divided in each country, but there are so many differences that in practice, the arrangement is unique in each of the five countries studied.

After compulsory education, individuals are called on to choose – if they can – between the various possibilities open to them, the main options being either to pursue further general or vocational study, or to leave education and enter the labour market. One of the most significant factors influencing this choice is how employers tend to use new graduates entering the labour market. The national peculiarities of education systems relate therefore both to the way in which they are organised (entirely school-based, apprenticeships or mixed school/work-based) and to the relationship between level of (vocational) education and entry into employment. Rates of take-up of higher education will be influenced by young people's perception of this relationship, which may, for example, encourage them either to continue with general education or to move into vocational education (cat. 3).

Over 40 years all countries will have experienced considerable changes to their post-compulsory secondary education, which will have been affected by the relationships both between general and vocational education and between vocational education and access to jobs. Here, the purpose is not to describe these peculiarities, but to compare the ways in which they have evolved, creating or responding to a demand for education.

(b) The place of secondary vocational qualifications (cat. 3, Graph 3) within the various education systems, and the changes in the flows passing through them or leaving at that level, provide data that is important for understanding the relationship between education and employment in the different countries. These qualifications are designed either for entry into working life (the school route) or as recognition of initial vocational skills (apprenticeship or post-school training), and their growth over time indicates their recognition by the labour market, which encourages young people to leave at that level rather than to continue studying. The situation differs from country to country (Graph 3).

There is however a common trend towards continued study leading to qualifications granting entry to higher education. Since these qualifications are seldom leaving certificates (cat. 4., Graph 4), the growth in them is principally reflected in the rise in the proportion of post-secondary qualifications (cat. 4 and cat. 5, Graph 5).

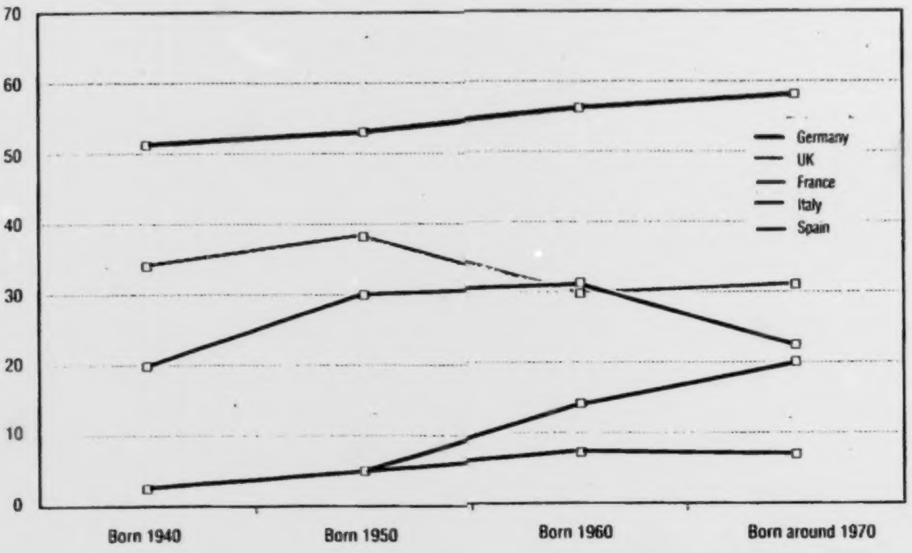
(c) In the five countries in the 1950s, when the generation born around 1938-1940 reached the end of compulsory education, it had the choice between two main alternatives: leaving school and finding a job, perhaps taking a short course of vocational training (the vast majority), or pursuing secondary education in the aim of moving on to higher education (a small minority). The way in which this choice has evolved for later generations has depended greatly on the organisation of vocational education within the education system. This was peculiar to each country as early as 1960.

"Germany is the only country (in the EDEX group) to have organised highly institutionalised non-school vocational education recognised by employers, leaving practically no room for on-the-job training. In the United Kingdom, vocational education was quite widespread, was delivered by a large number of diverse bodies, and took place after entry into active life, thus placing considerable emphasis on uncertificated on-the-job training. France combined school education before entry into active life with apprenticeship learning and uncertificated on-the-job training. Italy and Spain relied largely on on-the-job training" (Vincens, 2001). Subsequently three countries, Germany, the United Kingdom and Italy, kept this arrangement while France and Spain opted for school-based vocational education.

The results of these different arrangements in terms of qualifications among the population can be seen in Graph 3 (vocational education) and Graph 4 (secondary leaving qualifications granting entry to university).

Graph 3. **First level vocational education qualifications** (cat. 3.)

Evolution of the proportion of first level vocational education qualifications (cat. 3) within each generation of working age



Cat. 3 comprises: in the UK "others'", Trade Apprenticeship, City & Guilds, ONC/OND, NVQ 2/3; in France CAP, BEP; in Germany apprenticeships and Berufsfachschule (BFS); in Italy Scuola Professionale certificates; and in Spain FP.

(d). Despite its extreme diversity, the complexity of its organisation (several thousand different qualifications, the *laissez-faire* tradition of the 19th century and the unwillingness of the State to intervene) and the lack of transparency as to the skills actually certified, vocational education plays an important role in providing the population with qualifications in the United Kingdom. Its importance grew slightly from the early 1960s, when there was relatively little unemployment among young people, before falling back in favour of general education (Graph 4) and then stabilising.

In Italy, there has never been much enthusiasm for vocational education at this level, which has always accounted for less than 10% of leavers from the system (cat. 3. does not grant entry to university). Young people prefer to take long courses of vocational education in technical and vocational training institutes, which have given them unconditional entry to university since 1969. These qualifications account for a stable proportion of around 75% of the qualifications awarded by upper secondary establishments (Graph 4). They open the way to active life without closing the door to university. In the social context of Italy in the 1960s and '70s, it is likely that this arrangement helped young people from middle and working class backgrounds to gain entry to university.

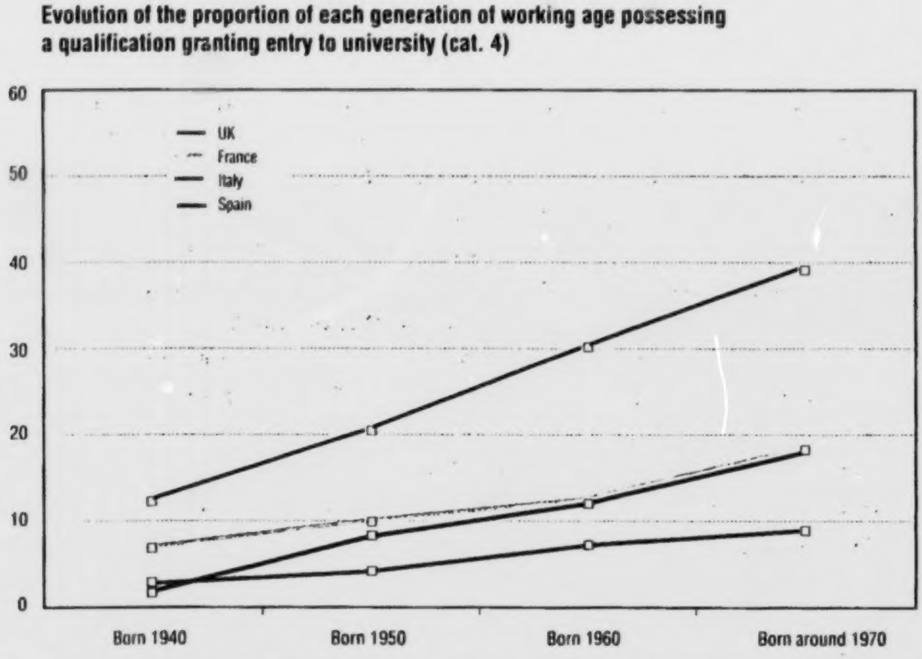
The stability and size of the proportion of *any* generation possessing an apprenticeship qualification in Germany has no equivalent in the other countries. This respected and effective model of vocational education, which is unique in Europe and is frequently cited as exemplary, is nonetheless undergoing major changes in terms of educational expansion although these are not reflected in the raw data. More and more young people are entering apprenticeships after taking the leaving examination of the *Realschule* (at 16 years of age) or the *Abitur* (18/19 years of age) instead of after *Hauptschule* (14/15 years of age). This rise in the level of apprenticeship entrants shows that this form of training remains a popular choice, even for those with a high level of general education permitting entry to university. This phenomenon, which is peculiar to Germany, helps to explain the lower social demand for university places in that country (Graph 5).

In Spain, there has been heavy continual growth of vocational education (FP), starting with the 1950 generation (as a result of the Law of 1970 (LGE)). It continues to provide a leaving certificate for something under half of young people who enter this track. The others go on to university, where a certain number of places on higher vocational courses are reserved for them. One of the features of the Spanish system is that it has seen a huge increase in numbers at all levels of the education system, which reflects the fact that it had been "lagging behind" the other countries in the project (Graphs 4 and 5).

In France, secondary vocational education has provided the main leaving qualification for each generation for a long time, and is therefore the level of qualification most commonly found among the active population, and invariably among manual and clerical workers. Starting with the generations born in the 1970s, young people holding a secondary vocational certificate (BEP) have been able to continue studying for a vocational *baccalauréat* (cat. 4.). This has considerably increased the proportion of people taking the *bac* in France since the late 1990s and hence driven down the numbers leaving vocational education at the secondary level (Graph 3). This fall is – in practice – offset by those leaving at Level 4 (Graph 4), since the vocational *bac* has come to "replace" the BEP (in terms of numbers of leavers).

(e) Category 4 (Graph 4) shows qualifications awarded at the end of secondary education for the main purpose of granting entry to higher education.

Graph 4. **Qualifications granting entry to higher education** (cat. 4)



Cat. 4 comprises: in the UK A-level; in France baccalauréats; in Germany *Abitur* and Fachhochschulreife; in Italy Maturità, Scuola Tecnica and Magistero certificates; and in Spain Bachillerato Superior, BUP and COU.

In all countries, the flows passing through this level have grown considerably, feeding mainly into higher education. The numbers leaving at this level have also been growing (Graph 4), especially in Italy, where university education delivers relatively few qualifications, and in France and Spain, notably among the generations born after 1960 (and therefore leaving in the 1980s). In the United Kingdom, the leaving rate is very low and the change is negligible. However, it should be said that those obtaining the qualification granting entry to university (A-level) have been through a selection procedure and that the vast majority will go on to higher education where, unlike their Italian counterparts, they will gain a university degree. In Germany, the number leaving with nothing but the *Abitur* are so low that they do not show up in the statistics.(⁹)

There are two possible explanations for leaving at this level: succumbing to the attractions of the labour market, which recognises young people's qualities and dissuades them from beginning higher education, or even from completing it if they have already begun; and dropping out of university after several years without a degree. This is the case among young Italians, almost all of whom enrol in university but who seldom obtain a *laurea* degree (+5 years) and therefore leave higher education without a qualification. This implies that the Italian labour market must grant clear recognition to students who have completed university. Young people in the United Kingdom, on the other hand, who have been carefully selected for entry to university, do well there. In Spain, there are fewer enrolments in university than in Italy and some young people leave after the *bachillerato*. But entry to university is also more selective than in France (and more complicated), which means that some young people do not enrol even though there are vacancies in some (less popular) subjects. In France, the range of higher education is very diverse. It is open to those holding a *baccalauréat*, although certain subjects are selective to some extent (the *Grandes Ecoles* system, which is highly selective, is peculiar to France), which encourages all those with a *baccalauréat* to continue studying. Those with a vocational *baccalauréat* are nonetheless strongly encouraged to enter active life and, being poorly prepared for more academic study, they drop out of university before gaining a degree.

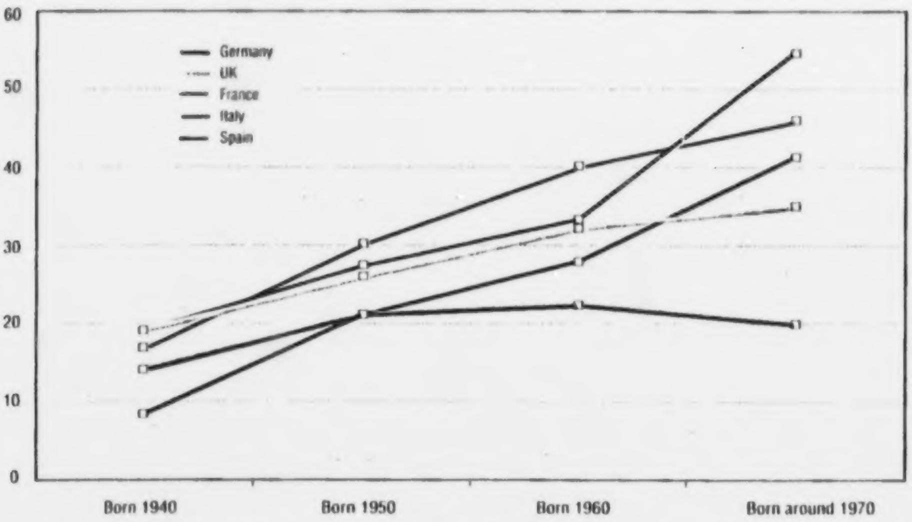
(⁹) Germany is not included in this data because those who pass the *Abitur* and do not take up an apprenticeship or move on to higher education are so few that they are included among those gaining a *Realschule* leaving certificate. This raises a problem in relation to the "level of vocational education in Germany": in terms of years of study, young people who have been through an apprenticeship after the *Abitur* have a "level" which is closer to cat. 5 than to cat. 3.

2.1.1.2.4. Higher education

The differences between countries are most marked in the evolution of higher education qualifications. In all countries except Germany,(10) entry to higher education is subject to obtaining a qualification at the end of secondary education (cat. 4.). Since this qualification is essentially designed to lead to university, the proportions of those with qualifications in both categories have been grouped together (cat. 4 + cat. 5, Graph 5). They indicate the expansion in higher education. The expansion in higher education qualifications has been continuous in all countries except Germany,(11) and stronger overall in France and Spain because of the rapid rise among generations born after 1960, i.e., entering higher education in the 1980s.

Graph 5. **Qualifications granting entry to higher education + higher education qualifications**

Evolution of the proportion of each generation of working age possessing at least a qualification granting entry to university



Cat. 4 comprises: in the UK A-level; in France baccalauréats; in Germany *Abitur* and Fachhochschulreife; in Italy Maturità, Scuola Tecnica and Magistero certificates; and in Spain Bachillerato Superior, BUP and COU. Cat. 5 comprises: in the UK, university degrees, HNC/HND, teaching and nursing qualifications; in France "licences" and above, higher bac+2; in Germany university and Fachhochschule qualifications, Meister and Techniker; in Italy university qualifications; and in Spain short and long university course qualifications.

---

(10) Some of the qualifications included in higher education may be obtained through continuing education, without the *Abitur* (but generally before the age of 30 years).

(11) N.B. The German data (Mikrozensus 1995) do not show the generations born after 1965-1966, which means a difference of some 7 years in comparison with the other countries. However, this does not seem to be the reason for such a low figure for higher education qualifications: from the indicators available, it would appear that this low figure is likely to continue in coming generations since young people in East Germany have until now been relatively little inclined to enter higher education.

BEST COPY AVAILABLE

The growth in Italy is due largely to qualifications granting entry to university (cat. 4.), there being many dropouts from university (in the last generation, 7% gained higher education qualifications while 46% had qualifications granting entry to university). Qualifications may also be gained late (after the age of 30 years), which means that the most recent generations observed (born in 1968 - 72 and therefore aged 25-29 years) have not yet "filled up" with higher education qualifications. The growth in the United Kingdom has been more modest, chiefly because there was no rapid expansion in the 1980s, while that in Germany has been not only relatively slight, but also actually negative in recent generations. In the UK as in Germany, however, demography has had an appreciable effect on these changes, the generations born in the 1960s and '70s (Annex 1.3) having been larger. Moreover, the United Kingdom in particular operates an overall *numerus clausus* for higher education, restricting entry to university.(12) In consequence, governments have not been obliged, as in the other countries, to respond to the total demand for higher education. In Germany, the growth in the number of those taking the *Abitur* has been among young people from more modest backgrounds, who clearly prefer an apprenticeship in a popular occupation to the relative uncertainty of a university course.

2.1.1.2.5. *Educational expansion: Similarities and differences*

To sum up, educational change in each of the five countries appears to have been dominated by one feature which distinguishes it clearly from the others and can be expressed as follows:

Germany has an *apprenticeship system of vocational education* which has been training (certificating) almost 60% of each generation for 40 years, despite the changes that have been mentioned. Educational expansion has been seen in the level of general education among young people starting apprenticeships, which has constantly risen. Italy is distinguished by its spectacular growth in secondary education qualifications *(Maturità)* (39% at the end of the period, twice the rate in France and Spain), with the result that Italy has an *excessively low rate of higher education qualifications* (7%, the same rate as Spain 30 years earlier). Even though there are structural reasons to explain this phenomenon, it places Italy in a very unusual position among European countries. France, on the other hand, stands out for its *rate*

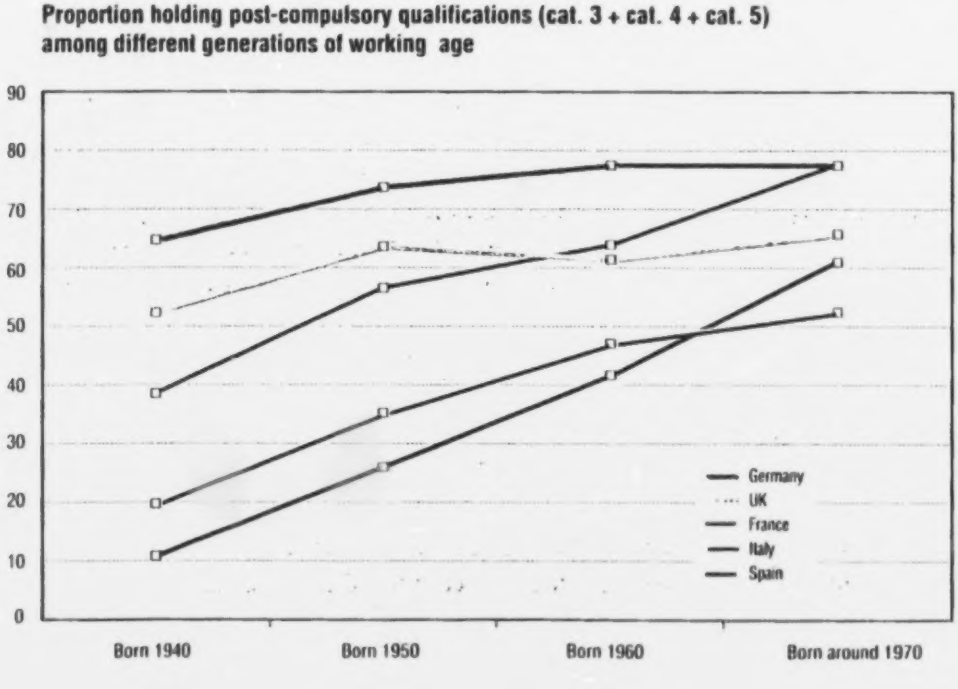
---

(12) The *numerus clausus* practised in Germany is more complex and subtle. It is partial at universities, but total at *Fachhochschulen*. In the universities, a number of disciplines – medicine, pharmacy, architecture, psychology and, in places, law – practise a *numerus clausus*. In all cases there are, however, still two ways of gaining entry to *Fachhochschule* or university: a) agreeing to move a long way from home, and b) enrolling on a waiting list, the length of the wait giving bonus points.

of higher education qualifications, which puts it well ahead of all the other countries, including the UK, with which it was "neck and neck" until the early 1990s. And lastly, it is the *proportion of vocational education qualifications* which distinguishes the United Kingdom. This may appear surprising and to be at odds with the image of education in that country. Large numbers are turned out by vocational education despite the total absence of institutionalisation and a want of transparency in the qualifications awarded. However, the country has also had a highly developed higher education sector for a long time, despite rigorous selection during secondary education. Lastly, Spain is remarkable for its *spectacular growth in the number of qualifications awarded over the last 30 years,* at all levels of its education system.

However educational expansion is measured, it has certainly occurred in the five project countries. The processes leading to it are peculiar to each country. There are two obvious points of similarity: the fall in the "no qualifications" category, which has not disappeared but has declined considerably in all the countries (Graph 2 above) and, as an immediate consequence, the rise in the percentage of each generation gaining a post-compulsory educational qualification (Graph 6 below).

Graph 6. **Total of post-compulsory qualifications** (cat. 3 + cat. 4 + cat. 5)



Aside from the similarities in the proportions of qualifications by generation, these graphs reveal that the countries have drawn closer together on these two indicators over 30 years, having been far apart at the start of the period. According to this criterion, educational expansion is common to the five countries, and has tended to bring them closer together in overall production of qualifications.

On the other hand, the pattern of development in the overall total of higher education qualifications (cat. 4 + 5, Graph 5) suggests rather that countries differ: the proportions vary widely, as does the pace of change. Against a background of general educational expansion, it is the production of higher education qualifications that creates the differences between countries. It is in this sector of education that countries' output has varied widely, but it should not be forgotten that it is the result of the preceding stages.

In 40 years the situation has changed from marked differences between countries in their proportions with no qualifications (between 33% and 89%) and similarities in the rate of higher education qualifications (under 16%) to the complete reverse: similar proportions with no qualifications (under 15%) and differences in the proportions with higher education qualifications (between 7% and 37%). Forty years ago, few people were (higher education) graduates, and many had no qualifications. The latter owed the varied pattern of their careers to the opportunities created by the labour market of which they were able to take advantage. Nowadays, many more people have qualifications, but the education system distinguishes between these. In all the countries, therefore, people's occupational and social positions seem to be predetermined by their degree of success within the education system.

Finding a first job is only one stage in everyone's career, but this time of life is marked, in the five countries studied, by a "downgrading process" (Fondeur, Lefresne 1999, p. 15). The question is what to do about this. This question will be addressed in Chapter 2.3 (Chances of gaining a management position).

"Educational policy decisions have been largely irreversible in the countries studied, and changes in political majority have not substantially altered them. The main features of the education system in each country have therefore remained recognisable from 1950 to 2000, with the possible exception of Spain. Here, the education system has been built up from a very low level and had to wait until 1970 before the first Law on universal education was passed, catching up with other countries. It is easy, therefore, to contextualise the expansion of education, but it is more difficult to pick out the common trends. All countries have nonetheless pursued a policy of expanding education, this aim being that much more ambitious where the starting point was low."

There is broad agreement that the notion of equity has been the driving force behind this development. However, the idea of meritocracy, which has generally formed the backdrop to the implementation of equal opportunity, does not completely solve the problem. On the other hand, there is less agreement over the idea that "economic development calls for mobilisation of talents and educational expansion, which is thus regarded at least as a precondition of economic growth and even, sometimes, as a cause, playing the role of independent variable in the growth process" (Vincens, 2001).

2.1.2. **Factors influencing the expansion process and the rise in levels of education**

The structural changes to education systems at the origin of educational expansion are often the result of decisions that were largely concerned with policy, either general policy (compulsory education, legislation on the purpose of education, etc.) or more "technical" matters such as the creation of new courses, new qualifications, modifications to orientation stages or allocation of funds. The original idea of the project was to link these educational policy decisions in each country with structural changes to the systems and hence to student flows over time.

Not only did it appear difficult to arrive at a satisfactory definition of what might be an educational policy decision, but the links between these and developments leading to the increase in the production of qualifications by the systems also seemed both obvious and manifestly complex. "Educational policies combine actions affecting the structure and operation of the system, but there is no doubt that their impact on the rise in qualifications is neither mechanical nor immediately predictable, since the reactions of those involved as agents and users introduce specific modulations and are a major force" (Béduwé, Fourcade 1999, p.27).

It was then decided (Steedman, Vincens, 2000) to examine educational expansion in the different countries in accordance with the roles played by the main participants in producing education (2.1). This analysis made it possible to put forward hypotheses as to why they behave differently (2.2).

2.1.2.1. *The roles of the protagonists: educational supply and demand* (13)

Education involves all social actors: government, families and young people, employers and trade unions. Educational expansion is therefore the outcome of a series of interactions between the supply of education emanating from national and regional government agencies, and from employers in the case of vocational education in some countries, and the demand coming from young people and their families. This demand consists in deriving the maximum benefit from the opportunities offered by the education system while keeping an eye on the prospects offered by the labour market.

---

(13) This aspect was explored particularly by J. Vincens (2000, 2001).

- In all the countries, education – general education at least – is largely funded by government. Since it is the primary means of socialising young people, educational expansion is a response to a desire for equity and equality of opportunity, which is a matter of consensus in all countries. However, this very general aim takes widely varying forms, depending on how the role of education in society, and particularly its economic role, is perceived.

  Government plays a dominant role in the five countries in designing the architecture of the education system, at least for compulsory education, secondary general education and the essentials of higher education. It defines the various courses and the links between them, decides on general terms and conditions of entry, regulates flows, and sets the *numerus clausus* for certain subjects.
- Employers have always played a part in vocational education: by providing apprenticeships (an institutional arrangement particularly favoured in Germany); by participating in various forms of school-based vocational education – training placements, examination panels, participation in course design (France); by providing on-the-job training and learning by doing, which is increasingly combined with academic education (Italy, Spain); by sending young people recruited straight from secondary education on courses given by a multitude of vocational bodies (United Kingdom). Employers also have an indirect influence, of course, through the use they make of qualified persons in the labour market and the importance that they give to qualifications.
- Young people and their families account for the demand for education, which depends on their social expectations. It is influenced by the organisation of the education system (in the broad sense) and the prospects offered by the labour market. The organisation of the education system has a major impact on the decisions made by young people (and their families) by conditioning the likelihood of gaining qualifications and laying down the requirements for progression from one stage of education to another. The type of education pursued affects the likelihood of obtaining a particular job or social status and their associated benefits. The labour market also influences the decision-making process in that it may offer interesting prospects without further study, as seems to be the case in the United Kingdom and Italy.

2.1.2.2. *The processes influencing educational expansion*

The part played by the parties involved shows how a particular type of education or a particular track may or may not develop in each country as a result of the interaction between educational supply and demand, leading to longer courses and greater output of persons with qualifications. The differences found between countries in the way in which they manage educational expansion can then be seen as resulting from the dominant role played by one player or group of players. The network has put forward a number of hypotheses.

2.1.2.2.1. The degree of responsibility taken by the State for the funding, administration and organisation of educational services (Single/multiple provider responsibility) (14)

In three out of five countries (France, Spain, Italy), the State is essentially the only institution responsible for almost the whole output of general and even vocational education, including higher education. It funds it completely, it decides on its internal organisation, and it manages the system, especially the teachers and the award of qualifications. These countries may also be regarded as "single providers", unlike the UK and Germany, where the State has less responsibility and where employers are much more involved in vocational education, which is highly developed.

In the three countries where the State plays a dominant central role, the very coherent internal organisation of education is manifested in the variety of courses offered as routes to higher education, and the many opportunities to move from one track to another. This improves everyone's chances of leaving the system with a qualification and strongly encourages the continuation of study. At the same time, a high level of unemployment can be seen among young entrants to the labour market. The situation is more or less the opposite in Germany and the United Kingdom where, as has been seen, fewer people go on studying because more of them leave and enter the labour market (apprenticeship being regarded as employment). Those who leave appear to suffer less (UK) from unemployment, and to have made cost-effective decisions in the long term (Germany). On the other hand, continued study – including higher education – is not systematically encouraged.

The dominant role of the State in the organisation of education thus appears to be a factor in its expansion, especially where the short-term opportunities in the labour market are not encouraging for young people, as is the case in France, Spain and Italy. The fact that the State controls the essentials of education is also a reflection of the popular will, which has been expressed through elections and even street demonstrations (1968 in France). Any measure aimed at extending selective entry to higher education is quickly seen as a barrier to the demand for education and provokes political protests that reduce its chances of coming to fruition.

---

(14) Devised by Hilary Steedman (2000).

In this type of organisation it must also be borne in mind that there are internal corporatist pressures within the system which seek to defend occupational interests, thereby helping in effect to reinforce the system (teachers' unions, for example). Heavy State involvement in education can thus only help it to expand. France, the country where the State is most involved in the output of education, has seen spectacular growth in post-*baccalauréat* qualifications.

2.1.2.2.2. Institutionalism and the rise in levels of education (15)

Pursuing this argument further, J.F. Germe puts forward the notion of the unity of the educational machine, and bases his argument on the French example. "The key point (of a unified system such as the French) is that general education and vocational education are single components of the same educational machine. All the components are managed by a single supervising body, the State, and essentially by a single government department, the Ministry of National Education." This unity is due to political will, which is a reflection of its time.

This idea is similar to that in the preceding paragraph to the extent that "Supervision of the education system by the State guarantees this unity. Occupational organisations and trade unions have no direct responsibility for the management of the educational machine."

The notion of unity is matched, in the French case, by that of continuity. The unity of the education system engendered by the single management of all its component parts by the State is accompanied by the interweaving of general and vocational tracks, so that it is possible to move from one to the other (subject to successful progress, and asymmetrically). This continuity derives from the fact that general and vocational education are described in terms of "levels", and this establishes a general hierarchy between them. Vocational education qualifications and general education qualifications are planned, designed and aligned by reference to these levels and are arranged in the form of a ladder up which pupils and students will progress. Furthermore, these levels of education are designed with direct reference to levels of employment. This gives them an economic and social dimension that goes much further than internal technical management by the Ministry of Education.

---

(15) Developed by J.F. Germe (2001).

"Young people and their families also see this apparatus as a single machine within which it is possible to move along distinct tracks that are nonetheless all academic and thus similar at least in principle. Educational progress is possible along both the general and the vocational track. The same level of education can be expected from each. Overall, this level of education gives the same rights in terms of continuing study, whether one has followed the general or the vocational track, and in principle the same hopes in terms of access to a given level of employment." And he cites the example of the *baccalauréat*, success in which permits enrolment in higher education, regardless of whether it is a vocational or a general *bac*.

"Levels of education are thus a key element of this unity. They allow the entire system to be cross-referenced with trades and professions, vocational training and general education.... Access to one level of education is a prerequisite for access to the next level of education, and to a higher level of employment."

These notions of unity and continuity in education systems are not shared by all education systems in European countries. "In the case of Germany, the education system is not unified, in the sense that it is the social partners who are, constitutionally, chiefly responsible for vocational education. The essential component of this system of vocational education, which is thus distinct from the system of general education, is apprenticeship. As a result of this lack of unity in the education system, each major component of that system may evolve differently. If the vocational education system is distinct from the general education system, this presupposes not only different ways of operating, but also, more particularly, greater clarity in the several aims of education and of preparation for work. Above all, the decisions which young people have to take (which obviously depend on the range of options) are *a priori* less reversible: selecting (or being directed towards) a vocational education track means abandoning general education tracks in order to find a job in a specific occupation."

A unified education system makes it easier, or possible, for continuity to exist between its component parts. This continuity fosters educational expansion because "the desired coherence of the education system (for the sake of continuity) removes certain basic obstacles to continued study: educational content, level of general education attained, enrolment requirements and knowledge of establishments. The distinction between vocational and general tracks still plays a role, but this is not crucial. Unity means that a vocational education track is also a means of continuing to study. This structural arrangement can only provide overall encouragement to further study while increasing the rate of failure (among those studying through vocational education). As a result, it allows people to leave at the same level at all stages of both general and vocational education. This is perhaps one reason why levels of education have risen particularly quickly in the case of France (and Spain)."

On the other hand, lack of unity leads to lack of continuity and hence – in broad terms – to fewer people going on to study at higher levels, since there is "competition" between the components of the education system (and with the labour market, as in Italy). In Germany, for example, the involvement of employers in education and training, including higher education, (16) is one of the factors explaining the weakness of university education: the likelihood of obtaining a socially satisfying job is greater, and invariably more certain, via the dual route. Moreover, as in the United Kingdom, relatively selective entry to university means that there is no real continuity from secondary to higher education, which restricts the output of higher education qualifications in these two countries, at least relative to France and Spain. In the case of Germany, it has even led to a fall. (17)

2.1.2.2.3. Level of qualifications and level of employment

One immediate consequence of the rise in levels of education, which is fostered in countries where the State has almost total responsibility for the education system, as has been seen, is that more qualifications are awarded. This is happening in a labour market in which qualifications are crucial for access to employment. Continued study is strongly encouraged by the unattractiveness of the labour market and low opportunity costs. "The unified hierarchical nature of employment, the standardised relationship between education and jobs, the (perceived and real) vital role of qualifications, and the different levels of qualifications in this socio-occupational hierarchy, must necessarily push people towards continued study, all other things being equal, especially since education is free and the only expense is the opportunity cost. Hierarchical levels of salaries, and of unemployment, that reflect the maximum level of education reached before leaving education, obviously work in the same direction. The information available on individuals suggests that access to employment and remuneration depend more on level of education than on choice of career" (Germe 2001, p. 8).

---

(16) The dual system of apprenticeship in the very popular banking and insurance sectors has, for example, very largely been opened up to those who have passed the *Abitur*. Moreover, there is direct access to the *Fachhochschulen*, which provide shorter higher education courses and were set up some 30 years ago, via both the *Abitur* and the dual system. In addition, a way for holders of the *Abitur* to acquire a *Fachhochschule* qualification via the dual system is currently under development (Haas, 2001). Hence, despite the rise in the rate of secondary general qualifications, the proportion of higher education qualifications has not greatly increased.

(17) We shall not, however, go into the question whether it is necessary to produce more higher education qualifications.

The rise in levels of education is therefore in itself inflationary since individuals will react to unemployment and the job hierarchy by seeking to reach as high a level as possible in the hierarchy of educational qualifications. In the case of France, vocational education leading to manual and clerical jobs, previously at Level 5 (short secondary education), has simply been replaced by education to Level 4 (long secondary education ending with a *baccalauréat* granting entry to higher education).

On the other hand, "where vocational education is not unified with general education, this introduces a significant measure of flexibility into the system.... People leave with higher levels of general education but with the same vocational training as before. Any parallel between level of vocational training and level of employment is not directly affected by the rise in levels of education and can therefore easily be maintained" (Germe, 2001, p. 9).

Lastly, the absence of certificated continuing education must necessarily mean that choices made during initial education are more likely to be irreversible. In other words, continued study in the school and university system is encouraged because "a degree is for life". We know (Planas, 1996) that initial and continuing training tend overall to be complementary rather than act as alternatives. Continuing training generally goes with initial education: it primarily benefits higher categories of occupation, which are also the most highly qualified. In this scheme of things, it makes sense to invest heavily in initial education.

2.1.2.2.4. Decisions made by young people and their families (18)

In all the countries, the general rise in levels of education has been achieved by making education systems more accessible, and removing or reducing barriers to study, at least at primary and secondary levels. The options open to young people to continue studying or not after the end of compulsory education have been broadened everywhere. In other words, the importance of educational demand has generally increased because of the greater number of possibilities on offer.

These decisions – whether to continue with secondary and then higher education – are made by young people and their families on the basis of cost/benefit analysis. Many complex factors will influence the options, and hence their final decision. We have already seen that the likelihood of gaining a qualification, and the hope of associated benefits, are factors in the decision, but the expectation of non-monetary returns, social status, occupational value, and so on, may also play a part. At all events, the differences between the various categories of qualification in the rate of growth over the last 40 years in all five countries show that young people have not all faced the same choices or made their decisions subject to the same constraints. Their cost/benefit analyses have not been governed by the same factors, and they have not come to the same conclusions as to whether to continue in post-compulsory education. We therefore decided to list the various factors on which these analyses were based in order to demonstrate that they differ from one country to another. In turn, this may explain why levels of education have risen at different speeds in different countries.

---

(18) Developed by H. Steedman (2000)

The various factors in the cost/benefit analysis are summarised in the following table.

Cost-benefit of further full-time study 16-19 and in Higher Education (HE) following compulsory education

	Opportunity cost	Direct cost (fees, enrolment charge, books and stationery)		Universal direct subsidy to parent / student (i.e. child benefit or scholarship)		Transparency of qualification on labour market		Job/qualifications link (qualifications recognised in collective agreements)
		16-19	HE	16-19	HE	16-19	HE	
Italy	Low/Medium	Low	Low	Yes	No	Medium	Medium	No
Spain	Low	Low	Low	Yes	No	Medium	High	Yes
Germany	Medium/High	Low	Low	Yes	No	High	High	Yes
UK	Medium/High	Zero	Medium	Yes	No	Low	Medium	No

For full-time students between the ages of 16 and 19 years, the direct costs (direct costs less universal direct subsidy) which will influence these decisions are low in all the countries examined. They are also low in higher education (although subsidies are reduced), except in the United Kingdom. State action in keeping direct costs down (except for higher education in the UK) thus removes a major barrier to study, namely the ability of young people and their families to pay for it. By providing public funding of post-compulsory

BEST COPY AVAILABLE

education, governments have ultimately encouraged the pursuit of studies at that level.

In cost/benefit analysis, the benefits expected from obtaining a qualification should be a key factor in the decisions made by young people and their families. How qualifications are recognised in the labour market will influence individuals' decisions, as it shows which benefits may reasonably be expected from a qualification. The transparency of qualifications in the labour market, and the institutionalised recognition of those qualifications through collective agreements, are indicators of the institutional relationship between qualifications and employment. It can be seen that the institutional framework governing that relationship differs greatly between countries, being more transparent and restricting in France and Germany, much weaker in the United Kingdom, and in an intermediate position in Italy and Spain. This finding means that we cannot establish any simple two-way relationship between the institutionalised relationship between qualifications and jobs, and the pace of educational expansion. It will also be affected by other factors, such as the attractiveness of the dual system in the case of vocational education in Germany.

The conclusions to be drawn from this early work suggest that the factor governing educational expansion, which may in the end have a direct impact on educational demand, is the opportunity cost of post-compulsory education (Steedman, 2001). The main factor of this opportunity cost is the job opportunities available to young people at the relevant school age and their payscale expectations. This leads to something of a paradox since a fall in the overall demand for labour (and a rise in unemployment, especially among young people) leads, all other things being equal, to an increase in the numbers continuing in education and hence to a rise in the level of the supply, and vice versa. The supply of, and demand for, initial education and training will thus be cyclical in inverted phases. At times when unemployment among young people is high and, all other things being equal, opportunity cost falls, there will be more incentive to continue studying after compulsory education, and vice versa.

Nonetheless, the results of EDEX over a long period reveal a weak link between the production of qualifications and the position in these economic cycles. The production of qualifications has risen since the War without there being any obvious discontinuity in economic cycles.

2.2. Impact of educational expansion on jobs, remuneration and social position of more highly qualified generations: a comparative analysis

The EDEX project was launched by the "Qualifications and Labour Markets" network on the basis on earlier work (Mallet *et al.* 1997) funded by Cedefop between 1995 and 1998.(¹⁹) This work showed that the spread of people with qualifications, generation after generation, throughout the various job categories was largely an educational "supply-side effect" rather than a result of demand on the part of employers. This result, to which we shall return shortly, was evident in six European countries, Austria, France, Italy, the Netherlands, Spain and the United Kingdom, and then consolidated and confirmed by a series of Cedefop research contracts (Béduwé, Giret 1999, Espinasse, Vincens 1998, National Reports to Cedefop, 1997-98).

At the macro-economic level, EDEX expanded on research in the United States and amplified the initial results. Here, a definition is first provided of the analytical framework used in this chapter (1), the results concerning the "supply-side effect"; interpretations put forward by the network are then briefly summarised (2), the new results from EDEX pertaining to remuneration and educational expansion are set out (3), followed by access to management positions (4).

2.2.1. The analytical framework

Having placed skills at the heart of the relationship between education and employment, we put forward a model of access to employment which would take this into account. In concrete terms, in the macro analyses based on this model, we took a simplified view of skills as a vector by reducing them to two essential components: one acquired through formal education and training and characterised by a qualification, and the other acquired through implicit education, or work experience, for which an individual's age or seniority in the labour market can act as a proxy.

Access to a given occupation P becomes possible as soon as an individual has the minimum skills, below which he or she will not be appointed. Each occupation P thus has a threshold of minimum competence which governs

---

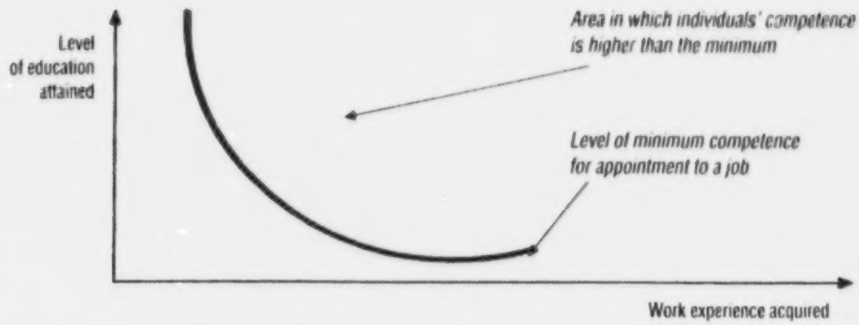
(¹⁹) LIRHE (France), GRET (Spain), ZSH (Germany) and CEP (UK) have been part of the network since 1995. In 1997, CERES (Italy) replaced ISFOL (Italy). In 1998, our Dutch partner at the University of Amsterdam (NL) could not continue with the work, while an American team, C.R.I.S. (USA) joined us for the TSER project.

access to it and is peculiar to it. This competence has a number of components, but qualifications and work experience are key elements. The competence threshold for occupation P may be attained by various combinations of qualifications and work experience, and therefore by individuals with different levels of qualifications and work experience. Work experience itself will depend on qualifications (level and specialism), on previous career, and on the personality of the individual.

It can be observed empirically that in most occupations, and in most countries, there is an inverse relationship between the minimum average level of qualifications and the age of the individuals performing a given occupation P: the higher the age, the lower the average qualifications, and vice versa. These empirical results reveal traces of the complementarity and interchangeability of qualifications and work experience that we postulated in the introduction.

Any individual with skills above the minimum competence threshold for occupation P is eligible for that occupation. The minimum competence for each occupation P is given by the relationship of complementarity between "qualifications" and "work experience", where the work experience must be relevant to the occupation in question; that is, it must have been acquired in a given employment sector. This relationship may be expressed schematically as follows:

Competence frontier (20) **for a given occupation**


Level of education attained
Area in which individuals' competence is higher than the minimum
Level of minimum competence for appointment to a job
Work experience acquired

---

(20) The notion of a frontier rests ultimately on the hypothesis that there is a hierarchical career structure for jobs: there must to some extent be a hierarchy of occupations and qualifications, and all ages must have access to the various occupations for there to be different ways of acquiring and demonstrating skills, and thus possible substitution between initial education and work experience. The nature of these frontiers thus depends on national occupational nomenclature.

Individuals in widely separated generations are thus eligible for the same job, provided that their skills are above the minimum competence required for that job. Even though a young person may have high level qualifications, he or she may not be eligible for a particular type of job because of a lack of adequate work experience.

This model of access to employment exists regardless of how the education and training system has evolved. It rests on the idea that individuals' skills change throughout their careers because of the experience and knowledge that they acquire in their different working situations and their social lives. This idea is independent of the evolution of education systems and would be true even if the production of qualifications were static – which is not the case.

We have to ask ourselves, however, what the impact of educational expansion is on this model of access to employment. Educational expansion means continuous quantitative and qualitative growth in the amount of education produced. This is produced essentially by way of longer initial education leading to greater quantities of qualifications at a higher level, which alters the relative numbers of people with qualifications in the labour supply. In consequence, educational expansion changes the relationship of complementarity between qualifications and work experience required for each job, and hence the competition for appointment to that job – first by raising the minimum level of qualifications required by each age group for a given job, and then by changing the conditions (especially the speed) under which relevant work experience is acquired so that the individual may be eligible for the job.

Educational expansion acts as a disruptive factor which may alter all the factrors contributing to this model of access to employment. As qualifications increase, they alters the context in which experience is acquired (or built up). This is what complicates the study: educational expansion is not simply a structural change in the number of qualifications present in the labour supply and available to employers. It also displaces the competence frontiers for every job: higher qualifications reduce the time required to acquire "minimum experience", or, more precisely, the time needed for subsequent learning. In other words, the two components are not independent; the first result of educational expansion is to alter the conditions of that interdependency. This has a profound effect on the conditions of competition, particularly inter-generational competition, for access to jobs.

It is possible to observe the (continual) displacement of minimum competence frontiers for each job under the influence of educational expansion by tracing, for example, the minimum competence frontiers for each job at different dates (Espinasse, 2002). This displacement is certainly a consequence of educational expansion, but it is complicated to break down and analyse.

2.2.2. The "supply-side effect": A brief outline of the work of the "Qualifications and Labour Markets" network

The model chosen by Mallet *et al.* (1997) simplifies the exercise. It consists of comparing the changes in the qualifications-age structures of occupations (representing frontier curves) between two dates (rather than continuously) and "fixing" the experience component (in this case, age). What results is then a slippage of the qualifications structure for each occupation any a given age. We then have to try to decide how much of this can be attributed to changes to the overall qualifications structure of the supply, or to changes in job structures.

2.2.2.1. *Method*

The method employed amounts, in practical terms, to comparing the matrices (Occupation-Age-Qualifications) of the entire active population (including the unemployed) observed on two dates. These matrices show the successive balances between supply of skills and demand for skills in the labour market at two successive moments. For each occupation, a comparison is made of the qualifications structure of each age group on the two dates (spaced about 10 years apart, depending on the country and the data available).

Four models were defined (Annex 2.1), on the assumption that growth in qualifications, by age group and within an occupation depends, at t, on:

M1. the structure at t0 (so-called observed variation model)

M2. the structure at t0 and the change in the supply of persons with qualifications within the active population between t and t0 (supply model)

M3. the structure at t0 and the change in the sizes (the numbers employed) of occupations (so-called demand model)

M4. the structure at t0 and the supply and demand (simultaneous model)

These four models were tested on the *number of people* represented in the matrices (Occupation-Age-Qualifications) and the age-qualifications *structures* were tested by occupation. It is in fact the qualifications-age structure of an occupation that interests us since it represents the skills structure of the occupation (with the skills proxies used).

The four models partly overlap (except M2 and M3), the first three (M1, M2 et M3) are better than that based on raw observation (M0), and the last (M4) is the best because of its R^2 but, surprisingly, it is not much better than the second (M2). This leads to the conclusions:

- that it makes sense to take into account the generational evolution of education in explaining the increase in persons with qualifications within occupations (M2 better than M0)
- that the evolution of the age-qualifications structure of occupations is (very broadly) proportional to the generational evolution of levels of education, and to the supply of persons with qualifications
- that taking both factors into account simultaneously provides – relatively – little additional information; in other words, taking demand into account (i.e. variation in the size of occupations) does not really improve the model that takes account of growth in the supply (i.e., of the generational evolution of levels of education) – (M4 is almost as good as M2 and better than M3).

These models made it possible to show that the quantity of qualifications produced by the education system – between two dates – is far greater than what would be required merely to "maintain" the same qualifications make-up of each of the categories of occupation between the same dates (Mallet *et al.*, 1997). The qualifications structure of each category has risen appreciably, which proves very simply that the development that has taken place in occupations in European economies (i.e., an increase in skilled jobs, or employment requiring qualified labour) has not been sufficient to absorb the surplus education produced. This has therefore been spread throughout ALL occupations, as the structure of initial qualifications has changed with the generations. **It is this last macro-statistical and macro-economic result that we have termed the "supply-side effect"**: ALL occupations have benefited from the educational expansion produced generation after generation in accordance with a surprisingly strong rule of proportionality that is the same in each country.

It is possible to read the results of the supply-side model differently (Annex 2.2). To say there is a strong supply-side effect in the evolution of the skills structures of occupational categories (the changes in b coefficients are proportional to supply) is to say that the skills drawn on by each category of occupation from within the overall supply is constant (proportionality of a coefficients). This is interpreted to mean that in order to supply occupation P, employers have maintained their initial drawings from each age*qualifications group but that since the level of qualifications in each age group has risen, the number of persons with qualifications has gone up (Vincens 1999).

2.2.2.2. *The results: a supply-side effect*

The results obtained (six European countries and the United States over several periods) are tabulated in Annex 2.3. They show that the qualifications and age structure of those working in an occupation have changed homogeneously across all occupations. The qualifications structure of an occupation may be predicted quite reliably by simply transferring the initial preferences as soon as it is known what changes have occurred in the supply over periods of 5 to 10 years. In order to predict these competence structures correctly, it is not necessary to know how the numbers employed in an occupation have changed.

This does not mean that demand has no effect on these occupational qualifications structures: they result from negotiation in the labour market between individuals and employers. But each occupation has its own specific structure, which remains distinct from the others. What our results tell us is that the general evolution of these structures has occurred simultaneously across all occupations, in proportion to the output of education (of qualifications) and that it does not depend, or barely depends, on changes in the sizes of the occupations over the period in question. This result, when applied to the structures (which may also be regarded as conditional distributions of skills in occupation P) is **unquestionably an educational supply-side effect** (Espinasse, June 2000).

The macro-statistical analysis of the spreading of successive generations of persons with qualifications throughout the economies of European countries has thus produced two key results:

- In all countries and over several periods, the evolution of the structures reveals great inertia, which cannot be explained solely by people's stability. This means that employers have largely been reproducing their recruitment/promotion decisions, continuing to combine the recruitment of young people (and hence of persons with qualifications) with the promotion of experienced employees (who are often less well qualified).
- Furthermore, higher levels of education have spread throughout all occupations in quite a homogeneous manner and not merely, as might have been expected, in a few occupations that are notable for their technological or organisational development.

These results are somewhat disturbing for those who argue that the expansion of initial education is a response to changing demand from employers, or at least that the expansion is made use of as occupations evolve. This idea is obviously not compatible with a homogeneous spread of qualifications among all occupations.

The same analytical model applied to American data shows results similar to those obtained in the countries of the EU. Contrary to the preliminary hypothesis, (which anticipated results that would be more sensitive to demand for education, as it is governed to a greater extent than in Europe by the cost of studying) the United States behaved in the same way as the European countries.

The supply-side effect observed in the United States (Annex 2.3) is sufficiently marked to lead our American partners to conclude that: "The results thus strongly support the notion that supply-side effects have dominated the allocation of skills to jobs in the time-period under investigation. These findings closely resemble those of the earlier Cedefop project for several European countries."

These results confirm the robustness of what has been termed the supply-side effect. (21) They mean that it is necessary to interpret this effect. All the work done in the EDEX project should be of assistance to this purpose.

2.2.2.3. *The constraints imposed by available data and the limits to interpretation of the results*

The method used and the results obtained have the usual advantages and disadvantages of macro-statistical analysis. Some of these may affect the interpretation.

- *Quality of the proxies used.* Any macro-statistical approach to the notion of skills is obliged to use proxies: level of qualifications as a proxy for formal education, and age as a proxy for work experience or implicit education. Even though this is an improvement on the information traditionally used (qualifications alone, or number of years of study), it is still a long way from the kind of data that would be desirable for an analysis based on individual skills.
- *The assumption of stability of nomenclature* hides obvious changes within occupations and levels of qualifications. The use of (homologous) stable nomenclatures over time is absolutely necessary for the purposes of comparison, but it masks differences due to changes in the meanings of terms. The way in which the content of the various nomenclatures has changed is still a "black hole". For instance, a secretary's work has evolved considerably in 20 years; the skills required of individuals entering that occupation could not have stayed the same. However, the content of education, and more particularly of vocational education, has also changed.

---

(21) Additional research has been carried by some teams, notably introducing gender and sector of work (*cf.* Annex 2.6). This nearly always confirms the scale of the supply-side effect.

The need for simplification means that, as there is no choice but to use statistical data, we must remember we are simplifying.

2.2.2.4. *A number of possible interpretations*

The results obtained are both illuminating and worrying. They provided the starting point for the network and the EDEX project. How to interpret them, however, was the subject of much discussion, both within and outside the network, leading to conclusions that were sometimes different and even contradictory. The results of the various stages of EDEX helped to make matters clearer. Three approaches to interpreting the results were developed. These are as follows (leaving aside some contradictory aspects).

2.2.2.4.1. The supply explanation

The first interpretation of the "supply-side effect" derives directly from observation of the results. Mallet *et al.* (1997) see the credentialist approach as a manifestation of employers' behaviour which, "given an increasingly well-qualified labour supply, simply increases their requirements for each occupation. The growing recruitment of persons with qualifications is due to their greater numbers and not to the intrinsic requirements of the job". A rigorous version of this theory would suggest that a qualification is a signal that serves merely to identify certain abilities in a job applicant, without improving his or her productivity. In consequence, the general rise in the level of qualifications does not increase individual productivity but alters the fit between qualifications and productivity. The increasing appointment to jobs of persons with qualifications is due to their greater presence in the labour market: employers wishing to go on recruiting the same individual abilities are obliged to take on young people with higher and higher qualifications. The supply of persons with qualifications in the labour market heavily influences recruitment behaviour and hence the demand for skills.

However, the supply-side effect refers to a more striking result: employers have kept their recruitment of persons with qualifications at a constant level from one age group to another, but since the overall composition of the supply has changed, the results of this (proportionally) constant recruitment have changed. This has been suggested by Espinasse and Vincens (1996) and is based on the notion of job eligibility threshold. Recruits for a given job P are chosen from among a set of individuals who satisfy the requirements of minimum competence for the job and are hence eligible to work in job P under conditions of normal productivity. The fact that recruitment remains more or less constant, or that the growth in a given skill within a given occupation is proportional to the growth of the skill within the supply (which comes to the same thing) is to be interpreted as a lottery among those who are eligible (Espinasse, 1999). The age-qualifications categories are assumed to be sufficiently wide for this lottery not to be constrained by questions of relative scarcity.

This statistical interpretation, which is irrefutable *a priori*, obviously raises questions since it is immediately undermined by observations on the ground: employers do not recruit haphazardly. This apparent contradiction led us to change the level of analysis and to turn to grassroots surveys (Chapter 3 below). It is only the analysis of employers' behaviour in a context of educational expansion that can explain the counter-intuitive aspect of this supply-based interpretation.

2.2.2.4.2. The demand explanation

A symmetrical interpretation of the results was devised. This was essentially based on the demand for skills, or rather on the progressive homogeneity in demand for skills, for recruitment to all occupations. A number interpretations were put forward to explain the results from this standpoint:

- The effect due to the widespread presence of new information technology in all occupations: all jobs are affected by the changes in skills brought about by the spread, itself homogeneous, of new information technology (Buechtemann, 1998, pp. 19-23).
- The effect of changes in the content of work resulting from the presence of persons with qualifications in jobs traditionally performed by persons without. This tends to make workers more productive and effective in using new technologies and meeting the new requirements of production processes (Steedman, 1998, Buechtemann, 1998).
- The effect of a gradual shift to the tertiary sector in European economies (Frey, 1998, p. 31).
- The effect on companies of competition in international markets, as a result of globalisation (Steedman, 1998, p. 26).

These interpretations of the homogeneous spread of persons with qualifications throughout all occupations (the demand side) means, however, that there will be a loss of specificity, or at least a reduction, in the demand for specific occupational qualifications. This would have significant consequences for analysis of both demand for skills, and the role and characteristics of initial education.

2.2.2.4.3. Explanation based on the interaction between supply and demand

Gradually, as the EDEX work progressed, the network came to devise analyses based on the interaction between supply and demand.

J. Vincens (1999) argues that the main issue is the changes that have come about over a long period in how jobs are filled.

"The increase in qualifications that can be observed is happening in two ways:

- "In all the jobs where specific qualifications have been required for entry at the start of a career for a very long time, there are more people with qualifications; they have become more common; in this case, supply-side and demand-side phenomena are very mixed (...) On the supply side, greater availability makes it possible to choose whether to appoint qualified individuals, and on the demand side a variety of reasons are found (...) Qualified individuals are content with a lower salary, changes in the content of jobs makes it necessary to recruit qualified people, the resources of the internal markets are inadequate in both quantity and quality...
- "The second way in which people with a particular level of qualifications spread is their increasing presence in jobs where such qualifications used not to exist... It is possible that this is a supply-side effect, if the term is used as a synonym for deskilling. But that would only be a provisional conclusion. Further research is needed to discover whether the supply remains homogeneous, whether the wages of those with the highest qualifications are no higher than the wages of others..."

J.M. Masjuan (1999) points out that the level of education is changing faster than the job structure because educational expansion is the product of social mechanisms; but this does not imply a total lack of connection between supply and demand. In the case of Spain, for example, the expansion of the public sector, which made it possible to absorb a large part of the increase in the number of people leaving the education system with qualifications between 1970 and 1990, no doubt had a positive influence on the decisions made by young people and their families on whether to continue studying.

2.2.2.5. *Interpretation using results from the whole of EDEX*

We need first to define our terms, and in particular what is meant by "demand" from employers: "We see individuals, characterised by qualifications and age, allocated to certain jobs. This allocation is in balance *ex post*. It is quite obvious that the balance is the outcome of a match between overall supply and overall demand. Trying to treat them separately means asking which came first: the chicken or the egg...It is well known that the structure of posts within occupations is changing: more managers and middle-ranking jobs, and fewer manual workers. It seems inconceivable that these changes should not affect the allocation of people to jobs" (Espinasse, 2000, p. 1).

Demand therefore obviously plays a role, but this role is as yet unclear. On the other hand, from the macro-statistical results obtained it can be said (p. 3) that "...it is useful to know how overall numbers in an occupation have changed in order to find the number of individuals with a given 'skill' in an occupation.... But this is clearly of no use when seeking to establish the structure (the proportion) of skills within an occupation" since:

- the new structure may be established satisfactorily from changes in the supply (M2 structure),
- increased information about occupational demand (size) does not improve the estimate (M4).

This outcome, when looked at in terms of structure, is unquestionably a supply-side effect.

Demand is expressed in terms both of the volume of qualified persons recruited and of preference for one category of labour over another (at the macro-statistical level) (proportional recruitment).

In the light of these results, it is plausible to argue that:

- the skills needed to do a job may be acquired through different combinations of education and experience (and also, despite the absence of statistical data, through social learning);
- in the absence of a shortage of qualifications, specific demands are not expressed in terms of level of qualifications;
- this is why level of qualifications is an insufficient signal, which does not mean that it is irrelevant, and the issue today is the nature of the (obviously many) other relevant and meaningful signals in the labour market which employers may use to assess individuals' skills;
- the theory best suited to explaining these findings is the filter theory (J. Planas).

These results agree with the frame of reference put forward in the filter theory, which suggests that qualifications act as pre-selectors – or, perhaps, negative selectors (excluding those with no qualifications) – while employers' final choices are subsequently based on other, subtler signals of skills. This theory does not diminish the value of qualifications; it changes their nature by increasing their value as a "threshold", making them a "sine qua non" for access to a job. The theory introduces additional signals, on the basis of which – and where there is no shortage of qualifications – employers make their final choices: "...qualifications play a twofold filter role, by signalling both the personal qualities (required to obtain them) and the skills taught on the course. Given the variety of possible qualifications, individuals with different qualifications may have related skills and may compete for the same type of job" (Louart, 2001).

This view of things is entirely compatible with the probabilist interpretation of the supply-side effect and removes the paradoxical aspect of the result first obtained. Finally, "the supply-side effect shows more clearly what does not happen than what does happen" (J. Planas).

To say that the specific demands of the labour market are not expressed, at the macro level, through a hierarchy of levels of qualifications implies that changes in demand cannot be used to provide education systems with exact guidelines for the production of qualifications. This statement has considerable consequences for the analysis of the relationships between education, training and employment.

2.2.3. **Remuneration for more education**

The network had already obtained initial results on the question of wages and salaries in the context of educational expansion from the exploratory work done for Cedefop (Espinasse, Vincens, 1998). We shall allude to this briefly (1) before discussing the results obtained from EDEX (Haas, Tahar, 2001) on the basis of method devised by G. Tahar (Tahar, 2000) and replicated in the five countries (2).

2.2.3.1. *The spread of qualifications in occupations and average salaries (reprise)*

Our initial work on wages and salaries was directly linked to the result concerning the supply-side effect. We wished to explore the impact of this effect on wages and salaries and their evolution, and to identify more clearly the role of salaries in explaining the supply-side effect.

These two aims called for an analysis that was carried out with varying degrees of thoroughness in the countries participating in the project (a data problem). This analysis showed up a number of facts which merit repeating here, as they will provide a background to the later results.

- Salary rises with age and qualifications. The rise due to age is greater, the higher the qualifications, and the higher the level of wages or salaries in the job.
- Salary is linked to the job held.

These structural phenomena occur in all five countries. It is more difficult to identify evolution, however, largely because the periods examined were not all of the same length: 5 years in France, 12 years in Germany, 10 years in Spain, and so on. There were nonetheless some points of similarity:

- There have been no major changes in the hierarchy of jobs classified by average wages or salary. In particular, the appreciable changes in numbers which have taken place in a few expanding and contracting occupations have not led to corresponding movements in salaries.
- Since wages and salaries differ according to age and qualifications in every job, the rise in the level of qualifications that can be observed in almost all jobs leads to a composite effect. More precisely, variation in occupational wages or salaries may be broken down into two effects: a "price" effect associated with variation in payment for each skill (each age/level of qualifications category) for a fixed skills structure, and a "quantity" effect associated with variation in skills structures at a constant price.
- The "quantity" effects are always positive. This reflects the greater abundance of persons with qualifications among the active population, in all jobs (supply-side effect).
- The "price" effects vary according to occupation.

The composite effect has led to a rise in average wages and salaries in every category of occupation (in France, Spain and Italy). As a result, the average wage or salary in a job may remain stable or rise slightly while the salaries of the various age-qualifications categories may fall.

The conclusions caution against any hasty interpretation of the results, which clearly reveal, despite the similarities described above, a wide range of evolutions. "The supply-side effect ultimately results from the diversity in methods of acquisition and manifestation of the skills required in jobs. The changes in the content of jobs brought about by technological progress have not generally been sufficiently large to disturb this mechanism. In other words, the availability of skills brought about by the rise in levels of education has made it possible to meet the requirements of progress within the boundaries of the supply-side effect.

These supply-side effect mechanisms tend to lead to a fall in real wages and salaries in an economy where productivity in not rising. But this is not the case in a growing economy enjoying technological progress, and it is well known that the prediction made in the early 1960s of equalisation of earnings thanks to educational expansion has not been generally confirmed.

As regards the part played by wages and salaries in the supply-side effect, it is possible that the economies of the countries studied have been subject to an intermediate regime combining several features of the various cases outlined above.

Most of the forces acting on the volume of employment in the various occupations relate to the economic situation and growth. This does not rule out any influence of price relative to skills. We may wonder, for example, whether the strong rise in the use of qualifications at level *bac+3,* in France, in the government and commercial management category, is linked to the abundance of the supply and the trend for relative salaries to fall.

This possibility appears to be reinforced by the finding that almost half of the employees in France in the productive sector who are classified as management (*cadres*) do not exercise any hierarchical function but owe their category to a level of expertise that merits their high salaries. (22) In these circumstances, it is easy to see that employers are encouraged to recruit these types of skill when they are plentiful in the market and that their relative price will tend to fall" (Espinasse, Vincens, 1998).

2.2.3.2. *Educational expansion and remuneration*

These initial results showed above all the importance of occupational category in the determination of wages and salaries, and confirmed the need to take into account the notion of skills, even roughly approximated by age/level of qualifications categories for the purpose of analysing their evolution. The next step was to reintroduce individual data in order to go beyond the composite effects of age/qualifications categories and the earlier approaches to counting. The introduction of eligibility curves into traditional earnings functions was a solution that was compatible with the general topic of the project and allowed comparison with classical analyses of wages and salaries.

We repeat here the main conclusions of the synthesis report (Haas, Tahar, 2001) compiled from the national analyses (Vignoles A., Walker J., 2000, Ghignoni E., 2000, Tahar G., 2000).

2.2.3.2.1. Competence frontier and remuneration

Our hypothesis was that occupation and requirements of access to each occupation played a fundamental part in determining remuneration. The hypothesis appeared to be generally correct in the case of static analyses but remained to be proved under conditions of change.

We therefore used the model of access to employment presented at the start of this chapter (2.1), which is based on the observation that work experience may be taken as a substitute for qualifications. Until now, those selected for occupation P had all had the same salary. The next idea was to differentiate this salary in accordance with level of education and seniority, the relationship between these two being given, for each occupation P, by the eligibility curve.

---

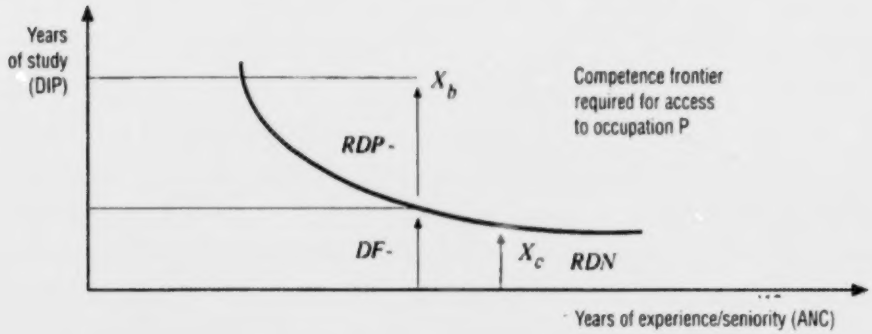
(21) According to the latest European survey by the Association pour l'emploi des Cadres (APEC). *Le Monde*, Initiatives supplement, 9 December 1998.

In so doing it had to be borne in mind that in numerical applications, the frontier is necessary but not sufficient to gain access to P: substitution is based solely on qualifications and age (work experience is an infinitely more complex variable than age or even seniority in the labour market). Nonetheless, it enables us to treat the question of salaries using a model that takes occupation into account, mediated by competence frontier. This is an obvious advance over classical earnings functions.

Starting from "envelope" curves defining a competence frontier in the seniority-qualifications plane (i.e., years of study) for a given occupation, a frontier is estimated from individual data using the econometric technique of stochastic production frontiers (or cost frontiers, as far as we are concerned). (23) In order to take into account the approximately hyperbolic empirical shape of frontiers, a linear model was estimated adjusting the inverse of years of study (INVDIP) to individuals' seniority (24) (ANC).

The existence of competence frontiers means that an individual's formal education and training (DIP) can be broken down into two parts (see figure below): one part (DF) corresponding to level of education adjusted according to competence frontier (we shall call it the "frontier" level of education); and a second (RD), corresponding to the residue of adjustment (we shall call it the "additional" level of education).

Breakdown of an individual's education DIP by occupational competence frontier



---

(23) It should be remembered that this consists of introducing an asymmetric composite error, the sum of the usual standard centred residue and an exponential residue, which is always positive in regression. Thus, the adjustment of the cluster of points is scaled down so as to leave it largely above the estimated curve. The stochastic frontier as proxy for the minimum envelope curve does not have the fault of the determinist frontier (furnished for example by the DEA technique of "data envelopment analysis"), which is too sensitive to aberrant points ("outliers") and does not take account of errors in measurement.

(24) Defined here summarily by their age less number of years of study DIP.

BEST COPY AVAILABLE

- The variable DF, measured in years of study, corresponds to level of education adjusted according to the competence frontier of the occupation. This level is regarded as a minimum level (in a probabilist sense) in the light of the experience acquired.
- The variable RDP, measured in years of study, corresponds to level of additional education; it is regarded as a proxy for "overeducation" in relation to the "frontier" level of education of the occupation (with given experience).

The econometric model leaves a proportion of the individuals in any occupation below the estimated frontier ("undereducation"). Individual x_c would be an example of this. This kind of negative remainder RDN, also measured in years of study, will be integrated in certain earnings function models.

The decision was also taken to adjust the frontier by regressing the level of education over seniority, which thus has the role of exogenous variable. This makes it possible to retain a link with the concept of overeducation. An obvious parallel can in fact be drawn between additional level of education and what is known in the literature as "overeducation". (25) Our "additional" education RD is a form of overeducation in relation to a minimum which can be encapsulated in the following two points:

- Overeducation as we understand it is not linked to occupational norms fixed *a priori* (with a varying degree of accuracy) but to a frontier level of education which falls as a worker's seniority rises.
- The frontier level of education is not a norm based on demand but an empirical constant.

---

(25) There is a wide literature on overeducation (the term "surplus schooling" is also used). Three definitions of level of education required are used in the literature (see e.g. Hartog, 1997, and his notion of ORU land):

job analysis (JA), which experts maintain gives the type and level of education required for each job in a given nomenclature. The best-known example is the American DOT (Dictionary of Occupational Titles).

worker self-assessment (WA), carried out by the surveyee himself/herself, who indicates the level he/she thinks necessary for his/her job.

realized matches (RM), corresponding to the mean (or mode) of the different levels of education found in holders of jobs belonging to a given occupation.

In a well-known but controversial article, Verdugo and Verdugo (1989) establish that overeducated workers earn less, all other things being equal. They use the RM definition of overeducation and put forward three hypotheses: a composite effect in the occupational groups studied (the overeducated being in particular sub-populations), lower productivity among the overeducated, and higher productivity among the undereducated.

Rumberger (1987) established a long time ago that the returns to surplus schooling remain positive but lower than the returns to required schooling (calculated using DOT).

Sicherman (1991) suggests that overeducated workers are younger, have had less on-the-job training and have been more mobile. From this he argues for an interpretation linked to poorly controlled heterogeneity of earnings functions. Groot (1993) confirms this point of view by showing the great importance of continuing education and training provided by employers.

We could, on the other hand, have chosen to adjust the frontier by regressing seniority over level of education, giving qualifications the role of exogenous variable. We chose the first solution in order to keep the link with the concept of overeducation and to leave the discussion open. However, the idea of regarding initial level of education as given *ex ante*, the frontier model then determining the seniority required for access to an occupation, is not alien to the topic of EDEX where, in any case, qualifications and seniority are the components of the vector of required skills, and where the labour market is a skills job market that cannot be reduced to a qualifications job market alone.

2.2.3.2.2. Results

As technology develops, it obviously creates a demand for skills, requiring at least an overall rise in levels of qualifications, which varies with the sector of activity (the celebrated technological gradient). The thesis of overeducation has its origins in the assumption that there may be dysfunctions between levels of initial education achieved and qualifications required by jobs. This thesis rests on the idea of a standard fit between education and employment, on which some doubt is thrown by our model based on competence frontiers. However, we felt it important to join the debate by looking at our results in the context of traditional research into earnings functions.

From our analysis one would expect a rise in indicators DF and RD in step with a rise in DIP. The relative evolution of DF and RD would take into account any possible overabundance of supply: some of the rise in education is located at the level of education frontier DF.

Hence, in respect of remuneration, the returns to DF and RD must differ since the "best educated" workers are assumed to be more productive and better able to adapt than the others. Is this higher level of competence remunerated? In practice, returns to additional education may be expected to be lower than returns to frontier education.

The breakdown of education DIP into its component parts DF and RDP made it possible to address three questions:

- How have competence frontiers shifted in recent years (examination of changes in average values of DF)?
- How has additional education evolved (examination of the average values of RDP)?
- How have the returns to the different types of initial education (DIP, DF, RDP) changed (estimation of earnings functions for 2 components of education)?

(a) The data are derived from sources particular to each country (Annex 2.4). The analyses were carried out separately, using a common model. The comparison relates to the results obtained.

(b) For all occupations and all countries except the United Kingdom, (26) educational expansion chiefly affects the frontier level, the additional education level being secondary or even marginal in France and especially Italy, even though it also rises slightly.

(c) Three countries (Germany, Italy, United Kingdom) have a variation in additional education (RDP) that is comparable between occupations, which means that there are no occupations which stand out by virtue of a specially enhanced allocation of "overeducated" labour. This observation agrees with the results for the supply-side effect.

(d) The econometric analyses of the returns to overall education (DIP, Annex 2.5) show that as a general rule, the return to one additional year of study has remained constant. In most of the countries, the rise in the level of education among the employed active population has not changed the systems and practice of remuneration for the different levels of qualifications within occupations.

Germany is an exception to this general rule since returns to education have fallen there. Three factors distinguish Germany from the other countries studied and help to explain this deviation from the general model:

- Until the 1980s, the returns to study were appreciably higher in Germany than in the other economies (*cf.* for example the results of the TSER (Targeted Socio-Economic Research Programme) project "PURE").
- This German peculiarity has eroded, and Germany has drawn closer to the average conditions of remuneration in Europe. Our analysis shows that this fall in the value put on qualifications is concentrated in a reduction in returns to additional education.
- Germany is a country where the value placed on experience is lower than anywhere else: while level of qualifications still has a notable influence on remuneration, the variance explained by earnings functions nonetheless remains relatively weak (*cf.* Annex 2.5), confirming the fact that experience has a lower market value.

---

(26) Developments in the United Kingdom are characterised by a very small rise in the level of education and a fall, on average, in frontier levels.

(e) The breakdown of qualifications into two components shows that the rise in the frontier level has been rewarded (Annex 2.6): the rise in the requirements of the minimum level of eligibility has been accompanied by a rise in remuneration.

Returns to additional education have also been maintained while remaining appreciably weaker than those to frontier education. The special "small bonus" awarded to additional education has not been affected by the increase in the flows of the "overeducated" within occupations. The fall in overall returns to education in Germany is due to the net fall in this component of education.

(f) This divergence in Germany calls for some comment, especially since empirical analyses have shown that German employers have largely based their arguments for recruiting from higher levels of education on changing skills. Not rewarding "demand-led" educational expansion is a paradox not seen in the other countries. Several hypotheses may be put forward:

- The decline in the remuneration of education in Germany is largely concentrated in the younger cohorts who have entered the labour market since the 1980s (Boockmann, Steiner, 2000), or at the time of the analysis. The decline in the returns to additional education observed in Germany appears to be linked to what may be termed a process of "inclusion" of young people in the labour market, as distinct from the process of exclusion of young people found in the other European countries and associated rather with the near stability of returns to additional education. In the case of Germany, the tendency to recruit leavers from the education system is associated with lower wages and salaries, while elsewhere, young people who are unemployed are ignored in the calculation of returns to education.
- Educational expansion in Germany results from a strong rise in the level of general education among young people taking up apprenticeships (27) and accounts for a good part of the growth in additional education. These results show that it is not rewarded as such. (28)
- Young people with university qualifications have gradually turned to the private sector, where opportunities are relatively numerous but

---

(27) This peculiarity was captured by the classification of overall level of education DIP. Vocational education qualifications were subdivided into four levels of academic baggage (without certificate of general education, *Hauptschule*, *Mittlere Reife*, *Abitur*).

(28) Qualifications at the level "*Abitur* + apprenticeship" and those at university level are those most affected by a decline in earnings (Boockmann, Steiner, 2000).

remuneration is more modest than in the public sector. Since university qualifications were regarded as an additional component of education for *all* jobs (because of the nomenclature used), this explains the consequent fall in returns.

These comments on the German exception have the corollary that the fall in the returns to additional education seen in Germany is not based on a "windfall effect". Employers in SMEs claim that they pay young people with higher education qualifications correctly. To reward higher levels of general education more generously than vocational training would throw into doubt the validity of vocational qualifications. ([29])

(g) We sought to contrast our results with those of another European TSER project, "Public Funding and Returns to Education" (PURE), which also looked at the evolution of returns to education. The periods of observation were longer than in our study, and the sampling was more frequent, but above all the earnings function was only calculated on the basis of overall education (DIP).

These analyses confirm that returns to qualifications have remained broadly constant in Spain, France and the United Kingdom. They confirm the relatively high remuneration paid for qualifications in Germany, but also the more significant fall in these returns in Germany in comparison with other European countries.

2.2.3.2.3. Conclusion

In respect of wages and salaries, it can be said that educational expansion has not fundamentally changed the systems and practices of remuneration for the different levels of qualifications. No significant fall is found in returns to education, conditional on access to a particular occupation. In this model, overall education is broken down into two parts, which are frontier education (the minimum level allowing access to employment, subject to age) and education that is additional to (and distinct from) this frontier education. The appreciable rise in the frontier level of qualifications permitting access to employment has been rewarded in terms of wages and salaries and, although to a lesser degree and with exceptions, so has that in additional education. But the returns to additional education, which are themselves appreciable, are considerably lower than those to frontier education. Through a composite effect, this explains why the returns to overall education are uncertain and even falling slightly.

([29]) But this equalisation effect is beginning to erode in favour of the *Abitur*. *Cf.* J. Haas (2000): Special Report on the Banking Sector. Discussion paper, Halle.

Furthermore, the fact that additional education is remunerated, although with low returns, proves that there is no systematic windfall effect.

Putting a condition of access to employment in the earnings function is a way of expressing a return to education that is not dependent on overall level of education alone. Our results show that it is falling less significantly than is suggested in more traditional models (Goux, Maurin, 1994, Lemistre, 2000). This conclusion supports the thesis that the rise in the level of education within occupations is rewarded, but that this rise occurs according to a complex dynamic in which abundance of qualifications combines with growth in employers' requirements and needs. This is precisely the point where our competence frontiers are to be found (the minimum condition for access to a job), providing an explanation for the result.

2.2.4 **Access to management positions by generation** (30)

In all the countries, access to management positions is heavily dependent on the level of qualifications attained (Shavit, Müller, 1998, pp. 19-20). The higher the level of qualifications that an individual holds, the greater his or her chances of joining a higher occupational category in comparison with individuals in the same generation with fewer qualifications. This result holds true from generation to generation in all countries possessing longitudinal studies of entry into employment. It is not – for the moment – called into question by educational expansion. At an intra-generational level, qualifications provide a guarantee against unemployment, temporary or part-time working, and are a condition that is necessary even though increasingly not sufficient for access to a job.

On the other hand, one might wonder whether the distinctions between the generations brought about by educational expansion retain this value placed on academic capital. In other words, does the ease of access to a higher social position that is given by qualifications persist from generation to generation?

In order to address this question, we turned to recent work carried out in France by Chauvel (1998). This work attracted our attention because it combines a generational approach with – admittedly simplified – mechanisms of access to employment, thus dealing with a topic close to that of EDEX. Chauvel analyses the links between generations, qualifications and the labour market "thus adopting the standpoint of key works of sociology (notably Baudelot, Establet, 2000) which depart from traditional analysis of persistent (or growing) inequality in academic achievement according to social origin. This analysis, inherited from Bourdieu and Passeron (1964, 1970), has been continued today, in various forms, by numerous authors (e.g., Galland, Rouault). Building on these already long-established ideas of Mannheim (1990), the authors replace a view in which the generational link can be summed up as social origin (inheritance) by a vision in which a generation has a communal destiny linked to the concomitant effects of the moment, the principal among these being their common passage through the education system" (Espinasse, 2000 in Process Report, EDEX, No. 4).

---

(30) i.e., salary categories described in France, Spain and Italy as having the "status" of *cadre general, Hauptschule, Mittlere Reife, Abitur*).

This view was akin to our attempts at conceptualisation during this research in order to move away from "education and employment" analyses, which base competition within and between generations on qualifications alone. By regarding the active population (Chapter 1) as a stack of generations that are clearly differentiated in terms of qualifications structure due to their passage through the education system, and who thus possess specific characteristics for access to employment, we also held that generations have a communal destiny that will influence the circumstances of their working lives. The life of a generation may be modelled as a twofold "transition":

- Transition through the education system at the same time. From this transition it inherits a specific qualifications structure which will characterise it throughout active life.
- Transition through active life, i.e., successive employment structures typical of the state of the market (and hence of technology and economic development).

These particular characteristics of a generation, provided by education and market conditions, will influence the conditions of internal competition between members of the generation, and those of inter-generational competition for access to employment in general and access to higher social positions in particular.

The work consisted, firstly, of reproducing in the other countries the analysis proposed by Chauvel for France (3.1) (31) and then of exploring these initial results in greater depth by substituting economic variables for the notion of generation (3.2).

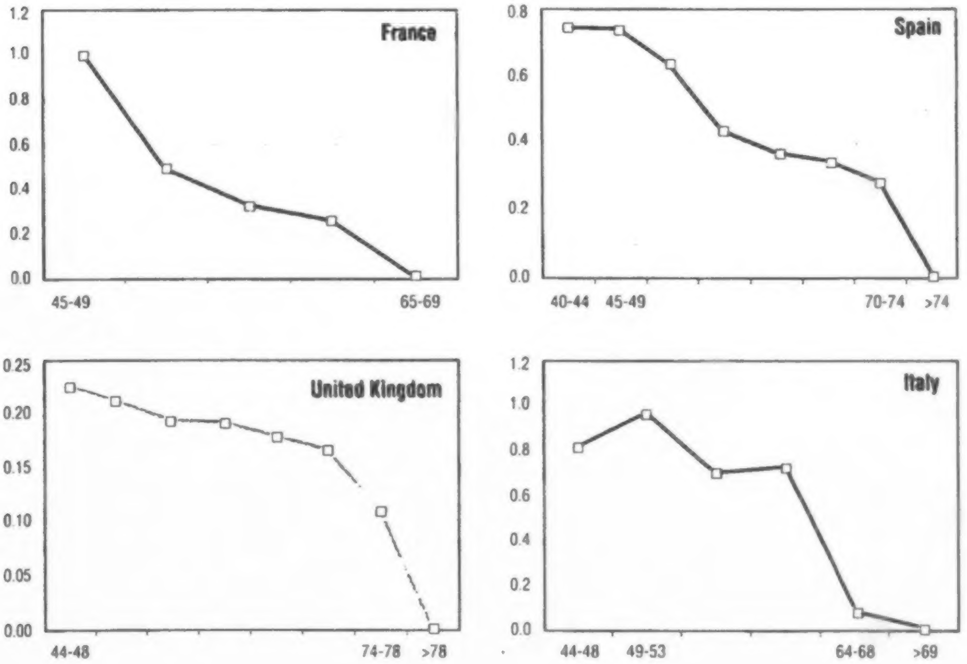
---

(31) For reasons of availability of ad hoc data, the German team was unable to produce the same results. J. Haas (2001), however, has published a synthesis paper drawing on existing studies: "L'accès aux positions supérieures et carrières des générations. Rapport sur le changement des mobilités professionnelles en Allemagne de l'Ouest", January 2001. These studies, although very close to the issue addressed by the network, are unfortunately too far removed in method and terminology to be compared with the results of the models used for calculation in the other countries. Since this chapter is largely devoted to international comparison, we shall not mention them here.

2.2.4.1. *A "generation effect"*

The model proposed by Chauvel (1998) was used for calculation in four countries (France, Italy, Spain and the United Kingdom). The results (Espinasse and Fourcade, 2000, Vivas, 2000, Ghignoni, 2000) reveal the existence of a "generation effect" in the modelling of probabilities of access to a management position. According to these results, the likelihood of becoming a manager (*cadre*) (conditional on age and qualifications) has been falling in all generations born after the period 1945-1949 (*cf.* Graph 7). This finding is common to the four countries. The models are statistically significant.

Graph 7. **Specific effect of generation on the probability of becoming a manager** (all other things being equal)



In the case of France, Chauvel explains these differences in inter-generational "returns" (which may be related to "educational returns") by "the interaction between the state of the education system and the state of the corresponding employment system". In particular, the returns enjoyed by the baby-boom generations is due to the conjunction of three phenomena: a rapid expansion in education (particularly higher education) that was still quite limited numerically; strong economic and technological development stimulating demand for qualifications; and a favourable competitive situation deriving from the low birth-rate during the War and the low level of qualifications among the pre-war generations. Similarly, the difficulties of the generations born in the late 1960s or just after derived both from a huge extension in the length of time spent in education, intensifying intra-generational competition between those gaining qualifications; from a restricted overall market in which growth in highly skilled jobs was developing relatively slowly; and from heavy competition from preceding generations which were more numerous, relatively well educated and had had the time to stabilise their social and occupational positions.

Chauvel thus sees in these results the existence of a "generation effect" in access to senior and middle-ranking positions. He explains this effect by "the successive variations in the economic situation encountered by these cohorts during their youth", and more especially by "the variations in economic conditions at the time when these cohorts were seeking work". This leads him to consider generation as "a key to understanding and, in some way, a vector of change".

We felt it would be rewarding to extend the method by taking into account structural variables describing the functioning of the labour market rather than the variable of generation.

2.2.4.2. *An increased competition effect*

The model proposed by Chauvel implicitly rests on a relationship in the form $P = f(A,D,G)$, (32) so that the allocation of people to jobs becomes dependent on their age, qualifications and year of birth. Year of birth, however, is not a significant variable for the purposes of economic analysis of the functioning of the labour market. On the other hand, and according to the hypotheses on which the research project is based, allocation depends on the demand for management jobs and the competition in the market for access to those jobs, besides individual characteristics usefully represented by age (as a proxy for seniority and/or experience). The greater the increase in management jobs in the employment market, the more chance everyone has of becoming a manager, all other things being equal. The competition between individuals for management jobs is more complex. It may be broken down into intra-generational competition (the more people in a generation have a qualification, the weaker will be the chance of obtaining a management job at that level of qualification) and inter-generational competition since an individual is also competing with all those "eligible" for a management position, whatever generation they belong to.

---

(32) Where P = probability of gaining a management job, A = seniority in the market, D = qualification, and G = year of birth.

By using the notion of eligibility defined at the beginning of this chapter, it becomes apparent that there are two ways of becoming eligible for a management post. The first is to obtain a higher education qualification. The second is to acquire the skills required for eligibility from an average level of education by actually doing a job that gives those skills (usually a middle-ranking post or junior management).

Over time, and hence as generations progress, the explosion in higher education, the universalisation of entry to upper secondary education, and the expansion of middle-ranking positions will have the effect of increasing the number of those eligible for management jobs enormously and, all other things being equal, the likelihood of actually being appointed.

We then put forward a structural form of the model of access to management jobs: P = *f* (A, D, DEMAND, INTRA, ELIGIBLES) (33). The probability of being a manager was estimated (34) in three countries (France, Italy, Spain). The results are as follows:

Variables	France	Italy	Spain
Qualification	**>0** increasing with level of qualification	**>0** increasing with level of qualification	**>0** increasing with level of qualification
Age	**>0** increasing with age	**>0** increasing with age until 54 yrs, then decreasing	**>0** increasing with age until 60 yrs, then decreasing
Demand	**>0** increasing with proportion of managers in AP	**>0** increasing with number of managers	**>0** increasing with proportion of managers in AP
Intra-generational competition	**<0** decreasing with proportion of higher ed. in AP	**<0** decreasing with proportion of higher ed. in generation	Not significant at 5%
Inter-generational competition	**<0** decreasing with proportion of higher ed. in AP	**<0** decreasing with proportion of higher ed. in AP	**<0** decreasing with proportion of higher ed. in AP

Data: France (Enquêtes Emploi 76-98) Spain (EPA 77, 82, 87, 90, 96, 98) Italy (LFS 93, 98)

---

(33) Where DEMAND = Proportion of managers in the active population at time t; INTRA = Proportion of those holding higher education qualifications (cat. 5) in the generation; ELIGIBLES = total proportion of those holding higher education qualifications in the active population.

(34) Logit simple model. *Cf.* the national reports for exact configurations and the construction of the databases.

BEST COPY AVAILABLE

Although the data is weak (only two surveys in the case of Italy), the results are significant and the conclusion seems to be the same everywhere: the likelihood of being in a management position increases with age and qualifications, all other things being equal. It also increases where the number of positions of authority is rising, and decreases in line with the number of eligible persons in the active population (AP).

In the light of these results it therefore appears that the number of persons "eligible" for management positions has risen over the generations more quickly than the number of management jobs available. The variable generation, which means little to economists on its own, offers a hidden simple explanation in terms of mechanisms of access to employment.

It is therefore the explanation that may be suggested – in the case of these three countries – for the fact that the likelihood of gaining a management position – at a given age and level of qualification – decreases generation after generation. In other words, the expansion in education, by multiplying the number of those eligible, has reduced the chances for each of them to make full use of their academic achievements (by occupying a management position).

2.2.5. Initial conclusions concerning the macro effects of educational expansion

Three results, which are common to all the countries taking part in the study, have been obtained:

- Educational expansion has spread within all occupational categories under the strong impact of educational supply, relatively independently of the parallel growth in the numbers working in the various occupational categories.
- Overall, educational expansion has been remunerated, subject to access to employment.
- Because of the increase in the numbers of those eligible for management positions, the likelihood of being appointed has tended to decline among generations born after 1940.

These results derive from three types of analysis resting on quite different methodologies and questions. Some are undoubtedly weak and need to be reproduced and consolidated. They are reinforced, however, by being common to the different countries. The following comments on similarities may therefore be made.

The reduction in the chances of recent generations gaining a management position is compatible with the supply-side effect, or at least with the fact that educational expansion means that there are more people with qualifications in every occupational category. There are in fact more and more people with higher education qualifications in all occupational categories, including non-management categories, and at all ages, even including those at the end of their careers. There are therefore more and more individuals with higher education qualifications not gaining management positions. In such cases, a qualification is of lower value in terms of social position.

This is also compatible with more frequent access to management positions at the *start* of their careers among recent graduates from short higher education courses, as J. Haas (2000) shows in the case of Germany, with a slight rise in France (Martinelli, 2000). What is happening is that there is a fall, or at least, a slowing, in access over the *whole* career. The results appear to indicate that it is becoming harder, generation by generation – and therefore less likely – for those holding higher education qualifications who do not obtain management positions at the start of their careers to reach such positions later on.

This would tend to show that recent generations have less chance of greater occupational mobility. This was not tested in the project but would obviously be a research topic worth exploring. Such results would confirm, at a macro level, what a recent international study showed by analysing company recruitment policies (CALL project, Leonardo da Vinci, DGXXII, 2000): it is becoming increasingly common in Germany, the United Kingdom and France – in the major industrial companies surveyed – for junior management positions to be filled by the recruitment of graduates of short or long higher education courses, while these positions had previously been filled through the promotion of manual workers. The giving of jobs to the former – who are automatically younger – restricts the use made of the latter – who are less well qualified but have more experience. The authors suggest that although these new practices as yet only affect small numbers they are totally compatible with both the huge expansion in education, and the supply-side effect. (35)

These practices differ in scale in each of the three countries, and the authors stress the need to see them in their context if the nature of the shift in patterns of recruitment is to be identified. Among other things, they are linked to the changes in the numbers of people leaving higher education, relative to traditional training. This is a direct consequence of the various manifestations of educational expansion in the three countries, as described in Chapter 1: "The British context seems the most likely to encourage the use of higher education graduates: manual skills are in decline while the number of young people leaving higher education has risen greatly; the ways of regulating the relationship between education and employment through negotiation have weakened, and even disappeared.... On the other hand, the German situation tends to restrict mass use of higher education graduates... conventional access to employment has been maintained." And lastly, "while coexistence between promoted staff and higher education graduates in middle-management positions in French companies seems viable *(and it is statistically more widespread than elsewhere, Ed.)*, the mechanisms of selection and competition between these two categories nonetheless discourage the promotion route" (Möbus, 2000).

---

(35) The reasons given by employers for using higher education graduates instead of promoted manual staff relate to the matters considered in the next chapter and will therefore not be discussed here. It is relevant, however, to use this example to explain the "supply-side efffect" (the presence of young people with higher education qualifications in a category of occupation where they used not to be represented) in terms of demand or interaction between supply and demand (point 2.4 of this chapter): "The argument rests largely on the skills associated with the role (that companies) intend to give to middle management." Three aspects are stressed: "having more formalised knowledge, practising a different management style, and applying new interpersonal and commercial skills" (Möbus, 2000, p. 2).

All this is not incompatible with the overall maintenance of remuneration subject to employment, as we showed in Chapter 2: "the rise in the level of education within occupations is remunerated, but according to a complex dynamic in which abundance of qualifications combines with growth in employers' requirements and needs." People with more qualifications are being recruited (because there is no overall choice in the matter, given the change in the supply) but this does no harm since this human capital is remunerated overall, within a given occupation. The question that arises is therefore how employers behave in response to the availability of a more highly qualified labour force (of all ages): what are their recruitment criteria, and how do they make use of it? This will be the subject of the next chapter.

2.3. Educational expansion, production demand and employers' behaviour

The last two chapters looked at educational expansion as a demographic process taking place within the education system and spreading throughout the economy. The analysis was macro-social and was largely based on a supply model: the demand for labour was addressed implicitly through the notion of employment, and through changes in the job structure and the wages and salaries associated with increased education.

In this third chapter (36) the level of observation is micro-economic. It looks at employers' behaviour and their demand for skills in a context of educational expansion. More broadly, it examines the links between the growth in initial education (and its corollary, the rise in the volume of qualifications) and the management of skills in companies.

There are two aspects to skills management which must be carefully defined for our purposes, even though they develop in parallel. The first is the allocation of people to jobs (recruitment, promotion, internal mobility, dismissal, etc.). A qualification is a signal that is used to decide on these allocations. This signal is sometimes crucial (for young people and new entrants to the labour market), and sometimes part of a more complicated set of information. The second aspect is the production of skills *within* the system of production in response to the changing environment in which a company operates. Initial education is then the factor (or one of the factors) on the basis of which the company builds up its collective skills and finds the means to survive.

How, then, have companies operated their two main levers (selecting and adapting people) in order to derive the greatest benefit from human resources in line with the exploitation of their other resources and with their strategic objectives (the market-product dyad)? What has been the effect of changes in the relative scarcity of people with different types of qualifications in this process? What influence (direct or indirect) has the long-term upward trend in levels of education had on the availability of skills, and therefore on the ability of companies to survive and grow?

2.3.1. Aims and method

Historically, the first result obtained by the network was the "supply-side effect". This macro-economic result, based on a supply model, proved remarkably stable over time (25 years of observation) and space (six

---

(36) We are grateful to J. M. Espinasse for his contribution to this chapter.

European countries and the United States). The first interpretation put forward was the so-called "supply explanation" (Chapter 2.4) and was based essentially on the notion of job eligibility in accordance with two key characteristics (in each case measurable through statistical proxies), qualifications and work experience. Everything was done in terms of statistics by observing the market as a whole, as though companies took part in a "lottery" for those eligible for a job, i.e., among those with the minimum competence for that job. Then, since the make-up of the eligible population changes because of the general increase in the numbers of people with qualifications (in all generations), the result of the lottery reflects the changes in the make-up of the supply. "This interpretation, essentially a classical economic approach, is based on the idea of twofold acquisition of human capital (at school and at work). The lottery hypothesis is merely a variant on 'standard random matching', which is at the base of a large part of the academic literature on the labour market. Our only original contribution is to limit the lottery to a sub-set of individuals (the eligible population)" (Espinasse, 1999).

2.3.1.1. *Changing the level of analysis*

This interpretation of the supply-side effect as part of a macro exercise obviously makes no sense at company level: managing people is not a matter of chance, either when they are appointed to a particular job or task, or when their skills are created (or modified). Although employers may be obliged to select their work force from among a labour supply that is increasingly well qualified, they still have recruitment strategies and practices. A company cannot remain passive in the face of a changing environment. The greater availability of people with qualifications (i.e., educated differently, better and for longer) has, without a doubt, altered the circumstances in which companies must manage human resources.

One clear lesson drawn from this project is that all companies are evidently aware of this altered situation, regardless of differences in their attitudes and opinions.

They have adjusted their allocation policies, a minimum level of qualifications being seen increasingly as a necessary but not sufficient condition for employment.

They have also adjusted their policies of building the skills needed to respond to changes in "technological and organisational" conditions, in accordance with their strategies and need for growth. In order to do so, they have continually transformed elements of existing skills (acquired at school and/or in individuals' previous working lives) into productive skills that can be used directly in the context in which the company is evolving. This applies to young people coming straight from school and also to all workers, who must contribute to cost-effective productivity.

We have seen (Chapter 1) that the spread of persons with qualifications is subject to demographic contingencies and occurs at the pace with which one generation succeeds another. The adaptation of labour to technological and organisational changes takes the form – with or without formal continuing education or training – of "tight flows" in the company context under company control. It is companies and companies alone that have the information on the skills available and required. This adaptation, which can be described as a process of skills production, uses individuals who have – over the course of time – been educated for longer, probably better, and certainly differently, generation after generation, within the education system.

We therefore set out to discover "how educational expansion is interpreted by employers, whether it is integrated, whether it is challenged, and whether it is seen as a tactical and strategic opportunity (in line with actual needs)" (Louart, 2001, p. 2).

The anticipated diversity in this behaviour – which was put forward as a hypothesis – was one of the ways of reconciling our macro-statistical observations with the reality of people management. The grassroots analysis reported here is thus a key element of the architecture of the project as a whole. It enabled us to reintroduce the demand for goods and services, and modes of production (technology and organisation), into the general analysis of skills building, something we were not able (or clever) enough to do at the macro-economic level.

2.3.1.2. *Method*

Company surveys were carried out in each country to collect data on employers' behaviour. The principle followed was to survey at least one company in each of three different sectors of activity, chosen jointly for the six countries: banking, national public services, and an industrial company chosen at will (an agri-food business in four countries). Following quite an extensive bibliographical review, HR managers and/or experts in the field were interviewed. It was agreed that the co-ordination of the survey instruments should be kept to a minimum, coherence being guaranteed in terms of objectives.

Each country submitted a report by sector surveyed (*cf.* Bibliography), from which were drawn up a synthesis report on the banking sector (Bruniaux, 2001) and a general synthesis report (Louart, 2001). The results presented here are very broadly composed of extracts from these two reports.

The purpose of collecting information was obviously not to compile an exhaustive list of employers' behaviours or of changes in the production systems of the different economies. Nor was it to try to find a universal interpretation of the differences observed (between countries, sectors of activity or types of job). More simply, information was collected in order to address three straightforward questions.

- Are the convergent factors (forces driving the economy, organisational changes, greater needs for skills, managerial approach) significant enough to enable us to reach general conclusions?
- What are the main societal and sectoral factors (labour markets, categorisation of occupations, labour negotiations) that may explain the diversity of behaviour?
- Does the similarity between the companies and sectors most exposed to globalisation constitute a relatively homogeneous model, in contradistinction to the heterogeneity of strictly controlled companies and sectors (e.g., public services) or companies of marked territoriality (SMEs with local markets)?

2.3.1.3. *Plan of the chapter*

In addition to the substantial technical problems posed by the scale of the field to be studied (need for comparability, choice of sectors/occupations studied, type of interlocutor chosen – employee, HR manager, expert, etc.), "the analysis must include management practices and the micro-economics of skills, in order to show how employers, in looking for skills for necessarily restricted purposes, adapt to the supply of persons with qualifications in the market according to national contexts and adjust their human resources management in consequence" (Bruniaux 2001, p. 2).

The multidisciplinary approach (economics, management, sociology) which was deliberately chosen to handle this stage was very effective, the specific concepts of each discipline being used to examine common findings. We shall nonetheless retain a broadly disciplinary approach in reporting on the work done. After an examination of the management vision in employers' responses to contextual changes brought about by educational expansion (2), a disciplinary synthesis restricted to the banking sector (3) will be presented. The chapter concludes with an analysis of the link between qualifications and skills, as perceived by an economist who seeks to formalise links between production and education (4).

2.3.2. Educational expansion and employers' behaviour

Economic developments are leading to a demand for higher skills and flexibility. This applies to each of the different countries and all sectors of activity. But "the links between education and skills are both loose, (37) indirect and influenced in a variety of ways by social conventions. How employers behave is governed by a number of considerations. In particular, they need to have regard to societal, sectoral and organisational factors, and local considerations" (Louart, 2001, p. 4).

We shall quote some sizeable extracts concerning both the societal effect as defined by Louart, and sectoral and occupational effects on employers' behaviour. We shall then give a few examples of their "tactical behaviour" in response to their interpretations of the economic, social and labour environment, and of the influences to which they are subjected.

2.3.2.1. *The societal effect – a prime factor*

2.3.2.1.1. The societal effect is dependent on the structure of the society and the economy, and the cultural rules and customs typical of each country. National cultures are affected by history, social conventions and political compromises. An examination of societal effects can help to explain the interrelationship between the education system and the production system. Here are some examples of differing societal effects in the various countries in the study:

	France	Germany	Italy	Spain	UK
Impact of liberalism			+	+	+ +
Increased individual responsibility	+		+		+ +
Power of organised labour	+	+ +	+	+	
Weight given to the education system	+ +	+ +		+	
Involvement of the State in the economy	+ +	+	+		

N.B.: Only the most obvious factors are included.

---

(37) "Loose linking" is a strategic resource used by companies in response to the need for adaptability. It is the equivalent, in terms of human assets, of "liquidity" in the case of financial assets.

For example, the United Kingdom demonstrates considerable economic liberalism, with great emphasis laid on individual autonomy. ([38]) Employers recruit directly from the labour market, without always finding the skills that they desire, while the education system is short of funds. There is little State intervention, even under New Labour. Organised labour has little power to counteract market forces. Except in the public services and the professions, terms of employment are negotiated in accordance with likely skills, according to widely varying power relationships (ranging from poor workers to City of London financiers).

Germany is heavily influenced by organised labour, which controls the dual system of training. Vocational education is still closely integrated into the economy. After France, it is the country where the most weight is given to public regulation. Until very recently, there was a relationship of trust between partners in an economic system based on alliances and community of interest. Emergent Anglo-Saxon-style capitalism is at odds with the tradition of conciliation.

Italy and Spain are heavily exposed to globalisation by political institutions, which are inclined to seize the opportunities this provides. In Italy, increasing numbers of women are entering employment, catching up with elsewhere in this respect. Spain has experienced the greatest growth in education in recent years. Both countries are marked by structural tensions between productive sectors, some of which are very modern and open to competition, while others have remained strongly traditional. Italy is more individualistic, and its education system is less in touch with occupational needs.

France is the country that is most obsessed with qualifications and levels of education. It is also the most strictly controlled in this field, by centralist administration and heavy regulation. However, the State also provides compensatory incentives and ultimately leaves employers considerable freedom.

2.3.2.1.2. In each country, jobs can be analysed as follows:

(a) Some tend to be **governed by the education system** (public-sector jobs, positions demanding specific qualifications, careers in which employers have no set preferences, and no issues of management or strategic goals arise).

(b) Some tend to be **governed by the production system** (jobs where potential is regarded as more important than initial qualifications, where

---

([38]) Including, for example, the toleration of employment of young people (500 000 work part-time while studying).

personal characteristics are crucial, and where career development depends on the ability to create and make use of constantly updated skills).

(c) Some tend to be **governed by occupational agreements** between employers' organisations, trade unions, public authorities and national bodies (jobs where skills are gradually developed through occupational channels, as in the German dual system).

The distinction between (a), (b) and (c) also depends on the societal effect. H. Slomp (39) argues that Europe is still a "patchwork of States" in which it will be difficult for occupational relationships to coalesce into a single model. A comparison of the **European systems of labour relations** throws up the following compound typology:

- the British model, which provides for wide freedom of negotiation (the company being the relevant level of confrontation);
- the German model, which gives a key role to sector negotiation;
- the Latin model, which gives the State a vital role in structuring labour relations.

The entire range of findings may be summed up in the following table, where each country has companies in all the different possible boxes.

	LABOUR RELATIONS		
Job type	**British ideal type**	**German ideal type**	**Latin ideal type**
Jobs in the free market	Competence assessed according to producers' criteria (qualifications, experience)	Model undergoing liberalisation	Qualifications considered necessary but not sufficient
Jobs subject to agreements (sectoral agreements, internal markets)	Internal certification	Competence negotiated through partnership (occupational apprenticeships)	Qualification equivalents Occupational knowledge sought
Public-sector jobs	Qualifications considered necessary but not sufficient	Qualifications considered necessary but not sufficient	Competence decided according to educators' criteria (qualifications)

---

(39) H. Slomp, Les relations professionnelles en Europe, Paris, L'Atelier, 2000.

2.3.2.2. *Sectoral and occupational effects – another factor*

(a) The variations found can be explained by the influence of technical or occupational effects. They also derive from the configuration of the labour market – is it organised from within or without?

Within companies, jobs are classified according to a grid structure… which reflects a number of objectives, each of these being related to the view of the skills expected of employees.

(b) Sectoral effects run through, contaminate and interfere with societal effects.

(c) Depending on sector and type of market, human resources strategies will have differing arrangements for decision-making (Gazier, 1993, Desreumaux and Louart, 1995). The possible decisions will depend on the characteristics of labour and the development of skills, as can be seen in the following tables. There is, however, a growing proportion of situations in which labour is educated and skills are expanding.

Little development or slow growth in skills required

	LABOUR REQUIRED WITH STABLE SKILLS	
	Labour with basic training	**Educated labour**
Key decision: Recruiting labour	Being in the right place (location)	Offering a good salary (pay benefits)
Key decision: Retaining labour	Encouraging loyalty (Fordism, paternalism)	Managing careers (interesting work)
	Level of education is set at recruitment and subsequent training is task-specific	Education acquired means skills must be maintained and actively used

Rapid growth in skills which may lead to breaks in working life

	LABOUR REQUIRED WITH EVOLVING SKILLS	
	Emphasis on the individual	**Emphasis on the group**
Key decision: Taking action affecting internal/external careers	Specialising and recycling Maintaining employability	Encouraging professional development networks
Key decision: Managing internal careers	Maintaining or updating skills	Fostering collective updating and organisational learning
	Level of education sought which will permit self-learning and occupational flexibility	Level of education sought which will permit self-learning and occupational flexibility

2.3.2.3. *Employers' tactical behaviour*

(a) Employers' thinking in procedural terms is limited. They are influenced by personal perceptions, which are heavily influenced by the groups to which they belong, their reference groups, their habits, urgent pressures, etc. They interpret their environment in line with the objectives that they set themselves, the purposes that they have in mind and the values underlying their actions. Their response to the context is always partial and specific to the circumstances, and depends on the macro-economic effects which it helps to (re)produce or change.

(b) As a whole, employers play a part in the overall process of educational expansion (they shape it, support it and contribute to its development). But this apparent community of interest derives from causes that may be quite different from those of the education system. As we have seen, it is based on the need for skills.

Employers' awareness of skills depends on their sector of activity, the jobs that they manage, and the pressure under which they find themselves. Their type of involvement also depends on whether – and how – they sub-contract their staff management.

How they behave is primarily governed by traditional economic reasoning (seeking benefit at least cost, controlling resources and behaviour, achieving a short and medium-term balance).

Employers (or their representatives) regard educational qualifications as adjustment variables. Moreover, they may sub-contract responsibility for assessing or managing these to experts (such as educators, consultants or intermediary bodies or individuals (40).

Generally, they have relatively little knowledge of education (and qualifications), and what they do know is largely stereotypical.

It has also become clear that they view qualifications in widely differing ways, as signals of:

- basic social modelling; they then focus on in-house production of the skills relevant to their needs;
- a set of potentials (according to the features of a course and its length); in this case they view qualifications merely as signals providing reassurance in relation to job content and level of recruitment;
- a set of aptitudes (to be used, combined or developed); they then seek to understand the content in order to evaluate it or complement it in the

---

(40) There are numerous meeting places and forums for discussion, the aim of which is to bring together producers of qualifications (educational providers) with creators of jobs (providers of employment). These are not markets based on supply and demand, but two-way haggling about either supply or demand in isolation.

context of their (productive, organisational and occupational) performance and flexibility targets.

Several types of qualifications (with slight variations between them) may lead to the same kind of skill and, equally, one qualification may cover people with widely varying skills (and differing levels of cognitive ability and experience of learning and life). Qualifications have therefore always been used as imperfect signals.

Without questioning the crucial importance of schooling (learning), employers (or their representatives) essentially recruit contributions that are yet to be made (potential). They do so by combining qualifications, certification, experience, behaviour and (the promise of) interpersonal capital. If they are asked to explain themselves, they talk chiefly of their biggest problem (hoped-for behaviour) and marginal means of discriminating between candidates (differences in practical skills). This does not mean that the rest is unimportant. It is regarded as taken for granted (or presumed not to lead to difficulties when making recruitment or career progression decisions).

(c) These general considerations are complicated by **tactical ploys**.
For example, some employers may try to protect and reproduce their own career histories (by demanding from others the qualifications or education that they had), or to make use of local opportunities, or to take advantage of financial, fiscal or social windfalls, etc.

In many companies, some educational output is absorbed though technically not strictly required, simply because the opportunity presents itself or because such a decision might enhance potential in-house resources (in terms of complexity or flexibility) without additional marginal expenditure (thanks to the stagnation of the labour market). This applies particularly to increased education that is:

- not occupationally specific (and therefore not directly linked to a job offer),
- used as a method of adjustment (at a time of crisis) or productive expansion (at a time of economic upturn),
- relatively dissociated from career expectations or occupational level; this process has been stimulated by recent economic developments linking the jobs crisis, the demand for competitiveness and the renewal of organisational models.

Sometimes, employers' behaviour is innovative. This may be reflected in organisational changes aimed at making the best possible use of the contributions of education and training (a less hierarchical structure, participatory management, internal jobs market, etc.).

(d) In all the countries, there is a mismatch between educational growth and skills required. This applies particularly in the United Kingdom and Italy, for different reasons.

In the United Kingdom, the traditional low level of skills resulted from a combination of reasons, including the low importance given to qualifications in recruitment (except for jobs where technical skills have to be checked). The shift towards qualifications has not changed the position entirely. It is reflected in the recruitment of greater numbers of people with qualifications, but education has not always taken occupational requirements into account. There are therefore still chronic shortages of certain skills, at the same time as criticism of the effects of overeducation. Many businesses still rely on low-skilled markets and technologies. The public education system, for its part, is short of funds and has been overtaken by independent institutions.

In Italy, the school (and university) system is considered too generalist, even though it helps to teach the formal idiom increasingly required by employers. There is therefore an admitted mismatch, which makes it possible to recruit people with a good level at the same time as being critical of the value of qualifications. Many employers take the opportunity to provide their own training in certain technical or occupational skills, regarding these as specific to their sector (or even their company). This encourages loyalty among employees.

In Germany, Haas (2001, pp. 22-23) points out, however, that: "One consequence of educational expansion is the establishment of a series of imbalances in the labour market... as a result of over-supply and/or under-supply. A cobweb cycle phenomenon has thus appeared, at least among engineers and teachers, the numbers of whom are significant... this affects social classes whose investment in higher education reacts very sensitively to the signals given out by the labour market.... Another consequence of educational expansion has consisted in the appearance of limitations to traditional turnover. These limitations – which take the form of difficulties in finding 'talented youngsters among the people' – particularly affect skilled trades, which account for 33% of apprentices and 25% of the working population in Germany. A considerable proportion of the traditional pool of talented young people has moved into groups with higher qualifications. In order to overcome these limitations – and to reach the lost pool – skilled trades have started recruiting more highly qualified young people."

2.3.3. The banking sector: Case study and international comparison

The banking sector was studied by all the countries taking part in the project, and was the subject of a European synthesis report (Bruniaux, 2001) and an American report (Bosch *et al.*, 2000), from which extensive extracts will be quoted here. This sector was chosen because it combines the full range of the changes in technology, organisation and competition affecting all sectors of activity. It has moved from activities organised in a highly Taylorian fashion in most countries, and "bureaucratic" management operating within a regulated framework, to a new – or evolving – type of organisation in a landscape of global competition.

The questions underlying the analysis were common to the different countries, but these retained the right to treat the information in the way they felt to be most efficient. The information provided in the reports is therefore very full but is drawn from differing sources – statistical data on the sector, expert reports based on different questions, interviews with experts, and in some cases ad hoc surveys of those involved.

We shall consider the common features of the development of the banking sector in the five countries (3.1) and the implications in terms of changes to skill requirements (3.2), employment management (3.3) and recruitment strategies (3.4), before drawing a number of conclusions (3.5).

2.3.3.1. *The "transnational" forces driving change*

The factors pushing the banking sector towards change in each country are the same as a whole, but their strength varies from one country to another.

At an earlier stage, starting in the 1960s, economic growth brought about unprecedented expansion in numbers of bank branches in order to accommodate savings at a time of prosperity. Except in the United Kingdom, where this phenomenon occurred later, this market became saturated in the 1980s, forcing banks to deal differently with their customers. Furthermore, customers became better informed and more demanding, thanks especially to the sharing of information made possible by the Internet (comparison of prices and services).

Currently, it is the increase in competition brought about by the deregulation and globalisation of capital markets which is pushing the banks to restructure themselves; only the Spanish banking sector still appears to be sheltered from international competition. But competition is also making itself felt in markets that have remained national: new non-banking competitors are now providing equivalent services and products (broad-distribution networks specialising in the sale of financial products).

Technological progress has also had a huge impact, both on internal organisation and on the manner in which services are delivered to customers by the banks, using information and communication technologies. Back office administrative tasks and customer databases have become computerised, as have the front-office expert situational analysis and decision-making support systems used, e.g., for internal organisation. The customer interface also uses bank cards, ATMs, and remote services via telephone or the Internet. The development of new financial products also makes use of computerisation.

National peculiarities can nonetheless be discerned, and may be mentioned at this stage. These relate in particular to the degree of internationalisation of the banking sector. The United Kingdom is the most advanced: a large number of merchant banks of various nationalities operates internationally, which may suggest that certain national peculiarities could be found in their management, especially of human resources. In Germany, some of the banks, usually private, are markedly international in scope. Another national peculiarity is the type of retirement provision, the general ageing of the population being reflected in the banking sector by the size of retirement schemes in terms of capitalisation (a factor cited by the United Kingdom).

These distinctly global factors of change are having a very similar impact on the strategies adopted by the banks in all the various countries: overall, **activities are becoming homogeneous** and banking **markets are being opened up**, in the wake of deregulation of activities and status: boundaries are becoming blurred between banking, insurance and other financial services, and between the activities of banks with different status: private, public and mutual. It is only in the United Kingdom that there is still a strong demarcation in terms of activities between international merchant banks and deposit or "retail" banks, which are generally on a national scale.

Current strategies are described in a variety of terms, but crop up in every country. The **quest for profitability and risk reduction**, which is the ultimate objective of the strategies employed, has led to a novel **customer focus**, which is linked to customers being more demanding and volatile, and even to the development of a "culture of commercial conquest" (France). With loans producing low returns to investment, the aim now is to sell services for which charges and commissions can be levied (United Kingdom). The market is segmented, and products are differentiated and targeted (Germany, France, Italy, United Kingdom, United States). This differentiation of products, allied with the constant attempt to reduce costs, is leading to **reorganisation**: decentralisation of management, organisation of branches in profit centres, and in general, greater responsibility given to branches (Italy, France, Germany, Spain), specialist branches for particular sections of the public (Germany), reductions in the number of branches together with widespread development of distance services, especially using call centres (United Kingdom), concentration of certain activities at head offices (Italy), outsourcing of support activities (Italy, Spain, Germany), investment in information technologies to increase overall efficiency (all), a quest for economies of scale through mergers and acquisitions (Germany, United Kingdom, Italy, Spain, United States) and/or creation of integrated networks of companies to develop differentiated activities (Italy).

The report by Bosch *et al.* (2000, p. 9) suggests that the concept of education and training in the banking sector should be expanded to include **"learning by banks, business and consumers"**, for three different reasons:

(1) "the educational attainment of individuals, on average, increased during the period under study;

(2) the ever more competitive operation of the market and, in particular, the growing variety of prices and conditions, encouraged (gave an incentive to) the so-called 'financial literacy' of customers;

(3) companies were managed by people who, independently or as part of the company, were personal customers demanding financial services".

The report on the United States emphasises the importance of the growth of e-banking and maintains that: "In a way, the most innovative element of e-banking is the opportunity it provides for carrying out transactions through self-service; and as an information channel. Even here, it could be argued that what it offers in this sense, is simply an improvement on traditional paper brochures – a different medium that enables calculations and simulations (which also appeared, more clumsily, in brochures).

"On the other hand, however, e-banking is no improvement on the reality of other channels for managing what is considered in this study as the most common case: that of a customer who does not know very well what products or services it would be good for them to buy, with what characteristics, how and when and through which channels, in order to take most advantage of their receipt and payment flows in relation to their wealth situation and prospects.

"All in all, with the arrival of e-banking, the challenge faced by banking in attaining their customers' financial consolidation continues, or rather becomes more complicated. Paradoxically, the more channels a customer has available, the more difficult relationship banking (suitably personalised) seems. This is the same as calling attention to the fact that the customer manager – the person who first gains the customer's trust and then helps them to resolve their doubts and uncertainty about what to buy and how to use it – is, if anything, more important. This perspective, as we have suggested, unites sales and service into one single reality: being available to the customer to help them take their interdependent decisions on the purchase and use of products and access to channels.

"There is one important reservation. The customer is gradually coming to expect a broader service than that provided by the branch office timetable and it is not always worth their while to make the journey there, whether or not they are e-banking users. This is where phone (home) banking emerges with its tremendous potential. It is as user-friendly a channel as any other (when it is used properly) and can be available at any time (although not for the whole range of services)" (Bosch *et al.*, 2000, p. 25).

In terms of the evolution of employment, all the countries (except perhaps the United Kingdom, where this issue is not mentioned) have currently to cope with an age pyramid as fewer people are recruited and the large numbers taken on in the 1970s grow older.

2.3.3.2. *Skills requirements*

One feature common to all the countries is the trend in employment towards:

- **more specialisation** in view of the growing need for "professionals" and technicians to manage change through technological and organisational innovation, and to develop new, more sophisticated services and products, and activities in international markets (computer specialists, lawyers, economists and graduates in marketing),
- **more multipurpose activities**, particularly in branch networks, where selling takes place at the expense of the middle and back office; from a quantitative point of view, this is the greatest change.

These two phenomena are reflected in a growth in the number of people with qualifications in the relevant socio-occupational categories, at both top and bottom of the hierarchy. This growth can be seen both within occupational categories (bank clerical and management staff) (through what we may call a "skills effect") and in the expansion of one particular category (professionals), and more generally in management expertise (through a "job structure" effect). It is of course the skills effect that EDEX sets out to investigate.

Overall, technological change requires staff to have the **ability to adapt** to more complex tools, a greater capacity for abstract thought, and the ability to take a number of decisions in real time. The nature of the work done by the categories at the bottom of the job ladder has therefore had to adapt and to rise in terms of skills, in the five countries studied; on the other hand, **how staff have adapted** to new skills varies from country to country.

2.3.3.3. *Job management which gives pride of place to initial education throws continuing education and training into doubt, and weakens internal markets.*

2.3.3.3.1. The trend towards graduate recruitment

A rise in the average level of qualifications of those recruited can be seen everywhere. Where these exist, the level of minimum requirements for appointment has been rising (formally expressed in terms such as a university degree for professionals in the UK, *bac* and then *bac+2* for bank staff in France, *Mittlere Reife* for *Bankangestellte(r)* apprenticeships in Germany – who face increasing competition from holders of the *Abitur* even though employers are resisting – and attempts to require the *laurea* (higher education degree) for middle-ranking positions and at least a certificate of upper secondary education for entry to the bottom occupational level in Italy, which are held back by the rigidities of job management in the sector). And where there are no minimum requirements, there has been an average rise in the level of qualifications of those recruited in all occupational categories.

The recruitment of more highly qualified labour market entrants thus comes up against the traditional scheme of things: they often skip the early stages, either by being placed at a higher level from the start, or by being promoted more quickly in the early years (France, Germany, Spain). Even general management posts within the network, traditionally reserved for in-house promotion, are now opening up to graduates of long higher education courses in France, for example. In all the countries, in-house managers are facing competition for the same posts from young graduates.

In the United States (Bosch *et al.*, 2000 pp. 2-3): "The supply of the educational system has an influence on hiring policies beyond the extent that seems necessary from either the changes in banking jobs or the skills (or shortcomings) of the graduates. Banks have traditionally trained their own staff, in both general-type skills and typically banking skills, including behaviour patterns – predominantly bureaucratic until recently.

"Post-secondary students now come to the labour market with general knowledge (e.g. accounting and financial). However, the educational system does not usually equip students with the social and communicational skills demanded by, among other activities, banking. Our exposé suggests that the educational system meets the demands for cognitive skills but not for social and communicational skills.

"Perhaps it is possible to speak of a degree of 'overqualification' in knowledge and 'underqualification' in relationship behaviour or social skills among the graduates hired by banks, in the light of what is required nowadays in the jobs that have changed most, those involving relationships with customers. There are not enough data to assess whether banks hire too many graduates, in the sense that this policy involves an unnecessary additional cost and a negative repercussion on professional careers. Although the reality of the banking market also suggests that this hiring policy may be economically correct when the analysis is broadened to take account of:

- the selection policies and criteria for general management and human resources;
- sociological considerations relating to:
  - the growing supply of graduates
  - the preferences of a customer base with growing educational attainment."

2.3.3.3.2. General questioning of links between initial and continuing education and training and of career patterns

The recruitment of young graduates, or even of people with experience, interferes with traditional channels of promotion, signalling a general weakening of the internal markets that used to be strong in this sector. One traditional feature of job management in the sector was indeed an internal market that was suited to the way in which the sector operated during its expansion phase, with massive recruitment of new entrants with intermediate qualifications (41) at lower levels of employment, assimilation by them of a banking "culture" (in the sense of a mixture of an ethic and technical expertise), and then mechanisms for in-house promotion based on seniority, sometimes linked with continuing education or training.

Banking is thus a sector with long careers that are regulated by a variable combination of seniority and continuing education or training. Germany generally recruits through apprenticeship and then makes promotion dependent on the acquisition, via continuing education and training, of qualifications specific to the sector, which have become more demanding over time. France and the United Kingdom take a similar approach in matters of in-house promotion, change of category being dependent on sector-specific qualifications. Initial education is, however, chiefly expected from the education system, while post-recruitment training is appreciably more informal. Spain and Italy typically have a tradition of promotion by seniority.

---

(41) In Germany, for example, holders of the *Mittlere Reife* (certificate of short secondary education), and in France, holders of the *brevet* and then the *baccalauréat;* in the United Kingdom, in line with British traditions, no specific qualification is required although a certain level of general culture and social skills is demanded through recruitment procedures.

This also throws into doubt existing arrangements for continuing education and training. In countries where these are heavily institutionalised in the banking sector, i.e., Germany, France and the United Kingdom, certificated training is being questioned: content that is unsuitable (United Kingdom, France), too expensive in circumstances of tighter personnel management (France), and irrelevant since the market in qualified young people allows the banks to train and promote at less cost (Germany, France)). There seems therefore to be a preference in these three countries for shorter, modular, targeted training courses, which do not necessarily lead to a certificate and draw on a higher level of initial education.

It has been seen that new recruits' higher level of general education makes occupational learning easier, even in countries which do not have a strong tradition of continuing education. For example, the Spanish bankers interviewed stated that the recruitment of university graduates made continuing education and training more effective because of the graduates' better cognitive abilities.

Where continuing education and training are not institutionalised, awareness of the need to raise the level of skills gives it greater legitimacy, at least among senior managers, but creates great organisational difficulties for existing personnel management methods.

This is all happening as though the need for restructuring, allied with the explosion in the supply of qualified persons, had made continuing education and training ever more necessary (in order to keep a job and/or to gain promotion, or to keep skills constantly updated) but ever less sufficient, given the weakening of the internal markets. This trend is opening the way to the recruitment of young labour market entrants with more qualifications to the search for staff with experience in the external market.

2.3.3.3.3. Methods of restructuring depend on the national context

It is obvious that while the basic trends in job evolution and management are the same, the ways in which the banking sector adapts to change will depend on the national context. In the light of massive restructuring and the overriding need for significant gains in productivity, the national banking sectors have adapted by making decisions that are particular to them.

In France and Germany, huge staff layoffs have been averted through **in-house training**, linked with retirement and early retirement packages. These two countries combine a high degree of protection for employees with a strong tradition of in-house training peculiar to the country (Germany) or the sector (France). The other three countries do not use this combination of in-house training and age-related measures even though they try – or at least two of them, Italy and Spain, try – to avert layoffs. Instead, they tend to use "numerical" flexibility.

Arrangements for appointing young people with qualifications differ from country to country (initial appointment via the dual system in Germany, for example), and from bank to bank within the same country (e.g., France: appointment at the bottom of the ladder, followed by a rapid series of promotions, is no longer systematically applied in all banks). Italy uses "job training contracts" to give young entrants operational training while reducing their cost to the employer. In Spain, the greater flexibility in employment recently introduced into the economy has led to the recruitment of young people under fixed-term contracts, and what appears to be a greater use of sub-contracting than in other countries.

In the countries where the **internal market** is strongest (France, Germany, Italy, Spain), restructuring has been managed without recourse to the dismissal of unqualified staff; this has been much less the case in the United Kingdom, where more numerous mergers and acquisitions have been the occasion for the dismissal of less productive staff and the acquisition of skills from other teams. In countries with an extensive sectoral continuing education and training system and a still-strong internal market, continuing education and training are a major means of adapting existing staff and avoiding layoffs (Germany, France), although early retirement and recruitment of young graduates are also used; in Italy, where there is scarcely any institutionalised training system, restructuring has been based largely on widespread early retirement and flexibility in recruitment.

2.3.3.4. *Recruitment strategies: adaptation to changes in the supply of education and to the strategies used by young graduates*

Having set out the impact of changes in the banking sector on job management, and more particularly the consequences of the rise in the level of new recruits, we must now show how the banking sector in each country has adapted its recruitment strategies to changes in the supply of education – which is itself largely determined by the national context and young people's own strategies. The importance accorded to qualifications varies greatly according to national culture. Recruitment, i.e., the result of the interaction between the supply of skills, or of qualified persons, in the labour market on the one hand, and the strategies of employers and potential employees on the other, is also affected by the internal organisation of the sector.

These observations are at the heart of EDEX. The fact that there are, alongside common models of change, differences due to the nature of the supply itself and the part played by qualifications in access to employment, was reason enough to embark on a difficult and complex international comparison. These differences are reflected in the way in which educational expansion has, in each country, governed the qualifications structure of each generation. Here are the details, country by country.

The continued practice among British banks until the 1990s of recruiting young people straight from school at the age of 16 years, with the lowest level of qualifications, reflected the way in which the system of initial education, and young people's strategies, were changing. Traditionally, huge numbers of young people left initial education at the end of compulsory schooling, subsequent vocational training was poorly developed, and general education was selective and did not guarantee employment, even for those going on to take a university degree (which incurred high opportunity costs). Banks were regarded as attractive employers, received large numbers of applications and could pick and choose. At higher levels, the explosion in the number of higher education graduates occurred later than in other countries, but the banks immediately benefited, both because the sector was highly valued by students, and because the internal market was not able to keep out external candidates for senior technical or managerial posts. On the other hand, employers complained of difficulties in recruiting staff, especially for the commercial side: there was no recognised initial vocational training, and the sector had no continuing education capacity in this field.

The low level of education among British youngsters leaving initial education explains, at least in part, the details of the banks' internal organisation: very early on, the British banks standardised their products and handling procedures, and divided up the organisation of services by splitting the work between counter staff. It is also likely that the widespread early development of distance services (especially call centres) can be interpreted partly as a way of adapting to this low level of staff qualifications. A comparison of changes in the banking sector in the United Kingdom and France carried out in the 1990s suggests that French staff had higher career expectations as well as a higher level of education. In response, French employers tried to introduce operational flexibility at the same time as integrated service, using highly qualified staff who were capable of using computer terminals; the policy among British employers has rather been to get over the disappearance of low-level tasks by a different type of operational flexibility simply aimed at filling employees' time, for example by moving them from counter to clearing duties when the latter are overburdened.

In France, it has also been seen how the growth in vocational qualifications at *bac+2* level has led to these categories replacing former employees holding a general *bac*, and the improved qualifications of these employees has certainly had a knock-on effect on the organisation of the work (*cf.* above). Conditions of employment in the sector (salaries, working conditions, various benefits) attract young people in particular, who are spontaneously turning to banking, including those without banking qualifications: with a BTS in selling, DUT in commerce, or even commercial college qualifications (*bac+4* or *5*): this enables employers in the sector to select, initially on the basis of qualifications.

In Germany, the dual system, the traditional route into employment, has been severely shaken by the rise in the level of qualifications among those leaving the education system, who are still eager to pursue this method of finding an almost guaranteed job, and the banking sector itself, which has traditionally been attractive. In consequence, entry via apprenticeship has become more selective, even though the main criterion is not strictly formal qualifications but test results. Since the level of general education among the young people recruited is rising, the training provided during apprenticeship can be reduced. Traditional learning has become more modular, and a new dual training formula is used increasingly in higher education.

In Spain, there is an explosion in university recruitments, in response to the development of relevant training courses. These recruitments are made easier by the attractiveness of the sector to young graduates, and a degree is the main point of reference for recruitment. While university degrees are considered suitable for specialist graduate activities (financial products, external trade, etc.), higher education is not suitable for the other type of current need, which is numerically greater (communication, sales techniques for branch staff). Subsequent continuing training has to build on whatever knowledge is possessed by young recruits. There is, however, an attempt to replace former employees by new staff with better qualifications in the growing number of middle-ranking positions, since the latter are thought to learn more quickly and to save the bank the need to invest in general education. The result is therefore the same as in Germany, despite a very different approach: thanks to the rise in the level of young people's education, combined with the attractiveness of the sector for them, employers are investing less in continuing education and training. However, the late expansion in the initial vocational education system may affect this trend towards "graduates only" as employers realise that large-scale recruitment of graduates may create problems in the medium term for career management. In particular, there is an administrative track in upper secondary vocational education, of which employers are currently considering making greater use for middle-level non-specialist posts; however, the issue of their potential involvement in this type of education has not yet been explored.

In Italy, the banking sector appears to have derived little benefit from the growth in initial higher education, partly because of a limited number of recruits, and partly on account of the failure of the banks to attract higher education graduates. This was not the case in the 1970s, with the expansion of upper secondary education. The banking sector was expanding at that time and although recruitment had become more selective in-house job management had been able to adapt. Currently, higher education qualifications are in demand; but until recently graduates shunned the sector, considering it too rigid and finding few interesting career prospects. The situation is improving rapidly, however, thanks to the sector's attempt to revise mechanisms for promotion – which used to be tied closely to seniority (new collective negotiations in 1999) – and to its recent restructuring: some new financial activities are controlled by the banks but not subject to collective banking agreements.

In the United States (Bosch *et al.*, 2000 p. 2): "In recent decades American banks have hired a growing percentage of graduates, and everything indicates that this trend will presumably continue in the coming years. The increase in the percentage of graduates is attributed both to the fact that:

- banks 'need' more and more qualified people; the greater complexity of banking activity leads to a greater demand for economic and financial expertise and types of behaviour in which social skills occupy a more important place; and
- the growing supply of graduates, who are relatively cheap, start off with broad 'general'-type training, and show good potential for a career in banking."

The report concludes (Bosch *et al.*, p. 26) that:

- "banking personnel, generally speaking, need more social and communicational skills than in the past, precisely because they are faced with a buyers' market and they must help these buyers to opt for what would be for them the advantages of financial consolidation (rather than providing them, with differing degrees of success, with a simple series of products);
- the educational system provides the generalist training (economic, financial and management) but does not transmit the social skills (behaviours) that are demanded;
- the challenge of financial consolidation is not easy, as demonstrated by the banks' lack of success in achieving it. The problem is not the cognitive component itself, but rather because the proper behaviours to generate

trust in the customer, a key variable for financial consolidation, are not forthcoming (generally because the opportune procedures are not properly specified either);

- thus what remains pending is a better specification of the procedures that must guide the relationship between customer and bank. These procedures will combine different proportions, according to the different segments, of personalised attention and self-service. This same lack continues to be observed in e-banking."

2.3.3.5. *Conclusions*

Generally, there are two reasons for recruiting staff who are more qualified or more experienced: **current changes in the jobs structure**, and the need to **anticipate skills requirements** over the long term. It is the second reason which is of interest to EDEX since it concerns a change in practice made possible by educational expansion. Anticipating skills requirements means engaging staff who are able to adapt to technological change and take on more tasks as and when these arise; it might also be said that employees must be able to maintain their own employability in the context of uncertain changes to their jobs brought about by rapid developments in banking activities.

Qualifications are one of the elements enabling this ability to adapt to be filtered. The higher the qualification, the greater this ability is assumed to be. In the case of new recruits, their qualifications are crucial since they provide more or less the only information available about their abilities. In the case of experienced staff, the information provided by qualifications is less important: work experience can reveal abilities in previous employment. The more experience individuals have acquired and/or the longer the time since they obtained their qualifications, the more evidence of learning ability will be sought in characteristics other than their qualifications. However, since increased levels of education are spreading throughout the labour market as the generations progress, it is highly likely that the employee with similar lengths of experience will also be better qualified than those already occupying the post. It is at this level that the nature of the experience acquired will then play a part.

Minimisation of the cost of in-house training does not appear to be an explicit reason for the rising level of qualifications among entrants to the sector, but rather its logical consequence. As a result, companies take advantage of it (France, Germany, Spain).

Despite an actual rise in the level of qualifications among new entrants, it cannot be held that better education has as a general rule increasingly become the key factor in recruitment. It all depends on the importance given to qualifications in the “cultural” tradition of each country, rather than in the sectoral tradition, since most of the banking sectors studied traditionally recruit poorly qualified people to low-level jobs. French, Italian and Spanish employers, on the other hand, seem to have raised their qualifications requirements for new entrants, while the Germans and British place their faith in aptitude tests – even though there appears to be a correlation between test results and level of initial education. In fact, career progression seems to be more rapid for those who are better qualified, regardless of the importance formally given to their qualifications when they are recruited.

2.3.4. **Demand for skills and output of persons with qualifications**

We have spoken of a convergence between the evolution of the economy, which is demanding more numerous, broader developmental skills, and that of the education systems that are turning out individuals equipped with qualifications at ever higher levels after ever longer periods spent in general education. P. Louart has spoken of coalescence between production demand and the need for vocational skills met by educational expansion. In the absence of any clear causal relationship between these two simultaneous developments, what information is available to help us to understand the nature of what binds them so closely together?

2.3.4.1. *The forces driving economic change*

Employers’ behaviour is necessarily affected by the **forces driving economic change**, which themselves generate skills requirements. These developmental forces may be summarised as follows (Dauty, Aubry, Ourtau, 2001, p. 7):

“*Movement from a protected situation to severe competitive pressure*: in 1975 markets were essentially national and protected, but by 1998 they were open. The intensification of competition and the quest for new productivity margins are linked to what can be summed up as globalisation, deregulation and a strengthening of market forces. This is the major phenomenon of recent years.

“*The dominance of product markets, or the mutation of markets*: variation in products and services, and innovative capacity, lead to new production requirements alongside the goal of reduced costs and improved quality;

“*The new technologies and technical developments,* particularly in information and communication systems, has come to affect all areas of economic activity, especially the tertiary sector. This ‘new information technology’ is made up of vast networks operating in real time. It has been a factor in both innovation and diversification, and the personalisation of services and procedures; it has had an impact on products as well as procedures, i.e., contact with customers.

"These three factors summarise the major changes that companies have experienced. In terms of organisation, these changes have led to a quest for **technical, organisational and social flexibility**, and adaptation to the demand for diversified products. The importance of the customer, the reduction in waiting times, and improvements made to productivity through the growth in volumes produced/services provided with a constant or reduced staff, are all major concerns. The resulting changes affect both the structures of 'jobs' or occupational categories, and the activities carried out by individuals and companies."

2.3.4.2. *An increased need for skills*

"These forces driving change force (labour to cope with) **greater uncertainty, greater complexity and a greater need to react"** (Louart, 2001, p.4). "Employers know that organisational, technical, and qualificational adaptation will affect the company; but they also know less and less about when, how, where, why, and who will be concerned" (Haas, 2000, pp. 14-15).

For example, performance criteria are becoming more diverse within companies (not just efficiency of production but also quality, deadlines, range and flexibility). Tools are becoming more and more sophisticated. Individual work and collective action demand ever more information handling, interpersonal and instrumental skills.

These forces have consequences (strength of penetration, speed of diffusion, organisational effects) that differ according to the productive sector but are sure to affect:

- *individual skills* (complexity of relationships and organisation, ability to adapt to wider contexts, considerable growth in information handling), and
- *organisational structure* (changes in jobs, slippage between jobs, fewer operational structures and more flexible process systems, and more reactive career structures, in which activities evolve and change).

This changing pattern is reflected in greater skills requirements, in both qualitative and quantitative terms. It is believed that these will be called for at some point (Louart, 2001, p. 9):

- *in the immediate future*, because of the need for technical expertise (in relation to the work to be done) and complexity (in relation to the circumstances in which work is done: e.g., so as to understand less stable environments, for the purpose of sociability and team working, or to handle tools requiring greater cognitive ability);

- *in the longer term*, because increased skills make it possible to anticipate changes in both jobs and organisation (restructuring, job substitution, etc.).

Benefits of enhanced skills	Immediately	Medium and long term
Occupational skills	Technical expertise	Technological adjustments and changes
Organisational skills	Adaptation to complexity	Organisational changes and job modifications

Behind the apparent unity of an overall context closely linked to the very nature of industrialised economies, are there marked peculiarities in the way in which different education systems produce qualifications and employers make use of skills?

2.3.4.2.1. Entry to the labour market

If the question is restricted to the link between school and recruitment of new (or quasi-new) labour market entrants, the reply seems clearly to be positive.

According to the countries, the degree to which the education provided by formal study is suited to the needs of employers varies. Where it is highly vocational (Germany), the gap between academic learning and employers' expectations is regarded as acceptable. Where it is less so (Italy), there are mismatches. The school system then seems unable to turn out "ready to use" young people. In France and Spain, the situation is in the middle. The issue is different in the United Kingdom, where employers express fewer direct expectations of qualifications and education in general (Louart, 2001).

Even in the German case (Böttcher, 2000): "Over the last 10 years, there have been noticeable changes in recruitment by companies in relation to the various sorts of qualifications awarded at the end of education: pupils who have concluded their studies with the certificate of compulsory education *(Hauptschulabschluss)* and may have taken some vocational training have broadly lost out relative to all other levels of qualification. The main beneficiaries have been those gaining higher education qualifications."

In the United Kingdom, the traditional low level of skills resulted from a combination of reasons, including the low importance given to qualifications in recruitment (except for jobs where technical skills have to be checked). The shift towards qualifications has not changed the position entirely. It is reflected in the recruitment of greater numbers of people with qualifications, but education has not always taken occupational requirements into account. There are therefore still chronic shortages of certain skills, at the same time as criticism of the effects of overeducation. Many businesses still rely on low-skilled markets and technologies. The public education system, for its part, is short of funds and has been overtaken by independent institutions.

As Steedman and Vignoles (2000) indicate, in the UK "... The demand is greatest for particular kinds of graduates. Specifically, employers seem to want young graduates, with good A levels and degrees from prestigious universities. However, the expansion of HE that took place in the late 1980s and early 1990s attracted an ever-widening range of people into HE. These non-traditional graduates appear to be less in demand. Whilst the strong demand for traditional graduates has kept relative average graduate salaries high, greater graduate diversity has ensured that there has also been a widening dispersion in the distribution of graduate salaries" (Connor, 1997). They also point out that: "The incidence of unemployment among new graduates varies significantly by degree subject."

In Italy, the school (and university) system is considered too generalist, even though it helps to teach the formal idiom increasingly required by employers. There is therefore an admitted mismatch, which makes it possible to recruit people with a good level at the same time as being critical of the value of qualifications. Many employers take the opportunity to provide their own training in certain technical or occupational skills, regarding these as specific to their sector (or even their company). This encourages loyalty among employees.

In the case of Germany, whose system of technical and vocational training has traditionally provided a point of reference in Europe, the skills covered by qualifications are evolving. Because of changes in market conditions, employers are increasingly interested in the social skills of qualified engineers and technicians. These social skills are today generally expected from university graduates. Graduates become representatives of the company, and it is they who are customers' points of contact, both as experts and as social interlocutors (Böttcher, 2000).

2.3.4.2.2. The need for skills

If the issue is considered more widely, beyond the simple question of finding jobs for new entrants, there is broad geographical agreement in the discourse.

Employers expect their employees to possess higher qualifications – which apparently means a broad education rather than specialisation. The growing pace of innovation in business requires higher education graduates to be better able to adapt to new technologies and to know more about these since new types of technical principles have been introduced and appear to need further development. Graduates are assumed to be able to access a wide range of information and to be up to date with recent scientific knowledge.

Social skills are increasing in importance. Besides the demand for greater flexibility and mobility (regional or international), it would appear that more individual initiative is expected in continuing vocational training.

"Largely standardised vocational training at the start of active life does not fit the widely varying academic baggage of applicants for training. It has largely been overtaken by rapid changes in techniques and structures and the constant calls for continuing education, and is not adequately suited to training requirements." (Böttcher, 2000). And this is said about Germany!

The findings regarding the UK are (Steedman and Vignoles, 2000): "....jobs in the UK are becoming more skilled and complex. More detailed examination of the data also indicated an increasing use of computers, and at an increasingly higher level of complexity, and a rising importance of communication skills, social skills and problem-solving skills in 1997, compared to 1992.

"... the increase in the number of graduates doing non-graduate level jobs is not totally due to the massive increase in the supply of graduates. Employers appear to be actively recruiting graduates because of their personal qualities and characteristics even if these graduates are often technically overqualified for such jobs.... some firms have experienced dramatic organisational change over recent years and the perception is that graduates are more capable of adapting to and managing such change."

"In other words, having a degree is no longer perceived, at least by many UK managers, as an automatic indicator of a person's ability and employability. Indeed many firms reported recruitment decision problems, in terms of judging the value of particular degrees."

2.3.4.3. *The link between skills and qualifications*

The question to be investigated is the link between this increased need for individual and collective skills, brought about by changes in the economy, and the rise in the levels of education produced by education systems.

For this purpose we need to go back to the notion of skills, as developed by the network (Planas *et al.*, 2000, Vincens, 1999, 2001) from the existing literature. Skills are a set of characteristics peculiar to each individual that have been acquired in various places (at school and work) at different times and in a variety of ways (initial and continuing education, work experience); they are correlated one with another, but are separately identifiable. Some skills, moreover, derive from the individual's personality, while others are brought out by the working environment or social life outside work, thereby producing distinctions between individuals with the same educational background.

Schooling (initial school and/or university education) is a major source of skills acquisition or – more precisely – of certain components of the vector of individual skills. A qualification is a synthetic indicator of that acquisition (usually final certification of basic acquisitions within formal education and training systems). In some cases (regulated professions) it is a requirement for access to the relevant occupation. It also certifies a certain length of course.

2.3.4.3.1. Qualifications and allocation

In terms of access to employment (i.e., of the allocation of people to jobs), qualifications play an obvious role in recruitment. This recruitment is modelled as a problem of adverse selection, the usual solution to which is based on techniques of statistical discrimination. Qualifications provide a statistical indication of the candidate's productive capacity expressed in terms of average performance and variance from that performance. Employers' desire to avoid risks in recruitment means that more value will be placed on qualifications if there is little gap between the two.

"Certification has a twofold role, which is particularly clear in the case of French national educational qualifications. It is a filtering tool used to differentiate between individuals, and it is a signal of presumed skills. The role of filter rests on the notion that the higher the qualifications, the more the individual who has obtained them possesses qualities that are innate or due to the environment and are presumed likely to lead to efficiency at work, especially in the acquisition of skills throughout active life. The role of signal of skills acquired reflects the content of the course and suggests what the holder of a given qualification is assumed to know and to be able to do. Employers are looking for skills, and qualifications are merely pointers which simplify the selection procedure, particularly in the case of new entrants" (Vincens, 2001).

The role of qualifications as a signal is reduced as an individual acquires longer and broader experience of work. The part played by qualifications in finding a first job is all-important as it is often the only signal of skills.

The acquisition and manifestation of individual skills is, on the other hand, a process involving complex interactions, frequently in unforeseeable ways, between two skill-producing systems, the education system and the production system. An individual's skills evolve, change and grow throughout working life, depending on whether or not the environment and the jobs available provide opportunities to enhance those skills or to have them recognised (Vincens, 1999).

As far as managers are concerned (Louart 2001): "Qualifications are acknowledged for what they can provide, namely **guarantees of education** (with varying degrees of reliability) and **indicators of position on leaving the education system** (level, expertise, occupational orientation)." The words may differ, but the ideas are the same as those behind the concepts of filter and signal.

2.3.4.3.2. Initial education and productive abilities

Once decisions are made about recruitment and allocation, the problem for both employer and employee is to convert the skills acquired at school and outside into actual productive abilities or – if preferred – performance. Performance is "measurable" in the sense that the employer may express an opinion about it. And may penalise any inadequate performance.

We are no longer in the realms of adverse selection and statistical discrimination, but in that of concrete information, in which each of an individual's skills can be observed "in situ" and any adaptations needed to achieve a satisfactory match can be assessed realistically. What matters is the state of an individual's knowledge, skills and self-confidence at any given moment, and the opportunities that the individual has to enhance those abilities, regardless of how they were acquired.

Louart points out that employers only have an "indirect and somewhat fluid perception of education. What interests them most is implied potential skills and employability. They buy skills and potential. They then adapt these bit by bit, in a reactive rather than a premeditated fashion." The role of qualifications has scarcely been defined before they are once again perceived as an indispensable tool...but one that may be irrelevant or at least totally inadequate!

"Given that employers need skills, they make do with whatever they find that is least costly and most adaptable." To this end they have at their disposal three types of signal: education, personal qualities, and experience. In the light of the supply available, employers become bigger consumers of education by drawing widely on both educational leavers and all age groups (cf. Chapter 1) since educational expansion is an ongoing phenomenon that spreads from generation to generation. How does their greater consumption of education enable employers to solve the problem of adaptability at minimum cost? (Louart, 2001).

Employers may recruit new resources, they may retrain those in post, and they may also try to recruit individuals who will be more adaptable in the longer term. We shall quote the definition of adaptation put forward by Stanckiewicz (1998, p. 17) because it covers both adaptability as a point of reference and the ability to adapt as a "function of the production of adaptability": "By adaptability or ability to adapt is meant in effect the ability to respond to a problematic situation. This response may be 'defensive' or 'offensive'.... Depending on the case, the response may consist of adjusting to the environment or of transforming the environment in the form of creative behaviour demonstrating freedom of action."

If we agree with Stanckiewicz, the best form of recruitment is to minimise the costs of adaptation in the short and long term in order to respond to the inevitable changes in the environment caused by technical and organisational developments. The ultimate goal of the education system – in its contribution to economic activities – is then to make this minimisation possible. This argument considerably simplifies the issue of the information needed to manage the education system. The problem is not that of preparing pupils directly for jobs (i.e. for the technical and organisational context) that will apply in 5, 10 or 30 years, but to provide them – as far as possible – with the cognitive skills that will enable employers to achieve with them and for them the adaptations that will prove necessary in the course of time.

How and why does more time spent in initial education encourage adaptability, and in what way can it reduce the cost of that ability?

More concretely, adaptability is defined as "an individual's ability (rapidly) to acquire the skills needed to carry out new tasks. The signals available are invariably education (qualifications, various courses and individual apprenticeships), work experience (skills acquired from practice in each job which an individual has experienced) and personal qualities (partly evident from the preceding two signals and their interrelationship, but only partly)" (Louart, 2001).

The basic idea is that this ability to adapt will be greater if the skills acquired by an individual at time t are expanded. According to this view, the contribution of work experience may be significant if it has enabled the individual to improve and prove his or her ability to adapt to change (Vincens, 2001). According to the hypothesis underlying many publications (e.g., Stanckiewicz, 1995), individuals' ability to react and adapt is – statically – positively associated with their level of education.

Educational expansion takes the form of growth in general education and longer periods spent studying. The younger generations are thus provided with increased general education because they spend longer learning. This also means that what individuals are taught is greater, more diversified and more open-ended, while the general content of vocational education, which is by definition more specialised than general education, expands as the level rises: fields of specialisation broaden as periods of study become longer. (42)

The qualifications awarded at the end of these longer courses is thus also the signal of a greater ability to learn, or at least of a capacity for sustained learning, and hence of greater adaptability at work. Léné (1998) therefore argues that "the greater the stock of skills acquired by an individual at a given date, the shorter will be the time needed to adapt to the same gap in skills." If the time needed to adapt is shorter, the cost will obviously be lower. All other things being equal, a more educated individual may prove to be a better investment in a context of growing uncertainty over the future direction of work.

Education that is more general also guarantees easier transferability of skills, which leads in turn to greater adaptability. Léné (1998) argues further that an individual's adaptability "is conditioned above all by the transferability of (past) knowledge to the production of new skills."

Thus educational expansion, by increasing adaptability, raises individuals' ability to adapt, i.e., the production of skills. In so doing, it has a direct influence on employers' costs of adapting staff.

This is true even where a company has no explicit policy of recruiting qualified workers. Qualifications are becoming more numerous over time, and a failure to raise the average level of staff qualifications – in the medium term – would suggest, paradoxically, that a company had an active policy of discrimination, which we have not found.

However, recruiting at higher levels of qualifications also leads to higher costs, especially in terms of wages and salaries, and consequences in terms of recognition of qualifications, individual career management and the hierarchical organisation of the company. These consequences help to bring about major changes in the way in which internal markets operate, and in employers' spot decisions to turn to external or job-specific markets.

It may be the range of practices among employers and their ways of managing and deciding between different categories of labour that explain why there is an overall rise in levels of education in all jobs and all age groups. The structural impact of the education system comes from this diversity of practices and the infinite number of combinations of skills recruited which it allows.

---

(42) In Germany, vocational education students have more and more academic baggage before they start their apprenticeships because they are spending ever longer in school.

2.3.5. Chapter conclusions

(a) The finding that levels of recruitment are rising is general, in all five countries and across all the sectors studied. The vast majority of employers are the largest consumers of education; essentially, they seem in favour of increased output by the education system – regardless of the actual arrangements. This does not prevent extreme variation in employers' behaviour, which is the result of the interplay of a wide variety of factors: social characteristics, sector of activity, jobs, local considerations and individuals' behaviour.

Companies are undergoing technological and organisational changes which are leading, in terms of HR management, to a greater need for skills and flexibility. More skills have to be recruited, and these skills have to be better suited to needs that are not only changing but are largely unforeseeable: the number of skilled jobs has risen, while the skills required to carry out jobs have expanded accordingly and can seldom be predicted in the medium term.

There are links between skills and qualifications even though employers often have merely an intuitive grasp of this. If better qualified staff, of all ages, are recruited, this suggests that the work force will be more knowledgeable in the immediate future, and more able to adapt to changes in their jobs: their education has been longer, more general and more transferable. Even though this may not be a stated aim, recruiting graduates means reduced costs of adaptation in due course: if people are better educated, they are also more quickly and more readily "trainable". It has been seen in the case of banking that this has had repercussions on the operation of the internal markets because of new links between initial and continuing education.

(b) Employers have thus benefited from the general rise in the level of education among staff, and among young people in particular. Because they have been able to recruit a more flexible, more adaptable work force from an external market, it has enabled them to reduce induction costs so as to focus training efforts on continual updating of staff. Educational expansion means that continuing training can be shorter and lighter, and allows new forms of mobility to be developed on the basis of renewed internal markets. In return, the rise in the level of education has, in places, encouraged employers to make use of the knowledge that is newly available, especially technical knowledge among young people, and to modify their recruitment criteria to match the expansion. In both cases, employers obtain human capital by buying from the education system either knowledge that is immediately usable or potential (Dauty, 2001).

It should not be overlooked, however, that qualifications are only a relative signal, enabling employers to classify staff in relation to "levels of requirements which define, for each job in the company, norms of access that are a policy expression of skill requirements, itself rendered necessary because operational norms of access which facilitate recruitment are too contingent on a particular evolutionary environment" (Ourliac, 1998). In this case, employers follow the trend of education system output because they want to recruit at the "same level" on a scale of values (the best, the average, those with minimum education, etc.). This gives qualifications a purely relative value.

And finally, "For a certain number of jobs, employers state that they are indifferent to qualifications and their level, but the selection mechanisms – especially where recruitment is carried out by intermediaries or focuses on capacity for expression – help to reproduce the academic hierarchy among young people (e.g., in sales jobs)" (Dauty, 2001).

Very negative remarks are also made about the expanded academic baggage brought into apprenticeships, particularly in Germany, where companies heavily influence the organisation and content of vocational education. This behaviour can be seen especially in the many SMEs and SMIs, which claim to be expanding and are trying to retain their own methods of renewing the work force.

(c) Essentially, the argument put forward most frequently to justify recruitment of better-educated staff is their *greater adaptability* to changes in work in organisms that are themselves subject to appreciable technical and organisational change. This argument rests on a definition of new needs that are very similar in all the countries studied.

Raising the qualifications level for recruitment to enable staff to be better able to *manage their careers* is suggested more rarely: staff also need to be able to maintain their own employability in the light of occupational uncertainty due to the speed of change. This is a two-edged argument, which may turn back on the employer since employees may either display "auto-loyalty" or increase their potential for voluntary mobility.

It is often said also that the level of education demanded by employers depends on the *level of education of their customers (and even of their managers).*(43) One of the effects of the fierce competition to which companies are subjected is the development of the "customer approach", which increasingly requires people with whom customers can identify to be appointed to posts in direct contact with the customers.

---

(43) S. Bruno (1998 p. 3): "In most industrialised countries, there is a sort of sequential order in which cognitive advances at management level lead to technological and organisational changes that then require greater knowledge on the part of workers, while cultural developments at lower levels of the company open up new possibilities that managers later pick up on and apply. The process is in consequence always unbalanced, so that the presence of mismatches is both easy to explain and impossible to avoid and, it must be added, desirable...."

The rise in the level of qualifications is often perceived as a sign of increased *social and cognitive skills*. These are of crucial importance both because they provide the substratum to technical training, because social skills are an indispensable element of successful interaction between the company and its customers, and because these are the skills that are hardest to teach through continuing education.

(d) The variety of expectations of qualifications in terms of skills ultimately explains the "supply-side effect". J. Haas argues that buying higher qualifications is a strategy of "preventative stockpiling of cultural and cognitive skills by companies so as to be ready for the damaging effects of their 'short-sightedness' in foreseeing future market developments and the new skill requirements that will result." Thus, "...educational upgrading within the structures of employment (positions, occupations) was caused by the growth of a special kind of 'demand'. At the core, it was not an interest in the utilization of certified know-how that grew, but rather, an interest in a potential of efficient learning and of smooth communication that can be mobilized...further examination of the idea of a strategic skills reserve appears to offer the opportunity to make progress in explaining the intriguing phenomenon of 'supply-side effect'.... The excellent statistical fit of the universalism model could be explained with another universalism: in the context of growing intensity of competition and waning ability to foresee the future, it is rational for every individual company to build up cognitive and cultural reserves for the purpose of ability for change" (Haas J., 2000, pp. 14-15).

The supply-side effect may thus be interpreted as the result of a demand for guarantees arising from people's inability to predict the future. Hence, this demand for a skills reserve, which is quite specific and has no relation to the certification provided by qualifications, can only be satisfied if the level of general education rises in one way or another, i.e., if young people and education systems have each adopted the strategy of expanding education. This brings us back to the idea of an interaction or congruence, as set out in the introduction, between the evolution of education systems and that of production systems.

(e) Chapter 1 showed the "importance of what may be called 'national pathways' in the expansion of education: while the general trend – a longer period spent studying and an increase in the number of secondary and higher qualifications – is the same in all the countries, the ways in which this comes about remains strongly influenced by national traditions" (Lutz, 2000).

One of the results obtained is that the driving forces of change – technological, economic, societal and organisational – may be regarded as the same in all European countries. They create increased quantitative and qualitative needs for skills, which are also comparable in all countries. Employers' behaviour – in terms of recruitment decisions and consumption of qualifications – is heavily constrained by national opportunities resulting from the generational output of education, systems of occupational relationships and, more generally, interaction between the education system and the production system. In order to increase total knowledge and skills, companies "have recourse to the labour that constitutes the supply in the labour market; and the structure of this supply is primarily a reflection of the traditions and changes making up the national path taken by the education system" (Lutz, 2000).

But, more basically, companies make do with the labour available in the labour market, which they draw from the education system or from external, internal or particular job markets, in order to solve their problems of adaptability of skills in a largely unpredictable technical and organisational environment. While there is no general shortage of skills, companies build the skills they need out of what the education system contributes. Skills are jointly produced by the education and employment systems – the latter being structurally obliged, for reasons of medium and long-term planning, to adapt the skills produced by the education system (Espinasse, 1999).

CHAPTER 3

Outlook for the relationship between education and employment

The results obtained in respect of changes in education systems (Chapter 1) and employers' behaviour (Chapter 3) were subsequently reinvested in a medium-term initiative to encourage discussion of the outlook for relations between education and employment in the project countries.

The educational outlook is centred on a simple question: will educational expansion continue? Will initial education go on turning out a growing supply of qualifications, and particularly of higher education qualifications? We shall see that the answer to these questions is rather negative for the next ten years, which may lead to a clear change in the economic context in comparison with previous years. In this case, how will employers be able to satisfy their needs for new skills, much of which was met in the past, as we have seen, by the growing output of young people with qualifications?

As in the other chapters, the work presented here draws on the international synthesis report, prepared by L. Frey, J.F. Germe and E. Ghignoni (2001), from which we shall quote lengthy extracts.

3.1. Stabilisation or a continuing rise in levels of education?

At the end of the work done on changes in education, which led the five European countries taking part in the project (Chapter 1) to examine educational expansion, the outlook for these changes was discussed. Would and could the expansion observed over (at least) 40 years in each of the countries continue? Were there differences between countries over this question, given the variation in pace and methods found to date?

The approach adopted to consider this outlook was to put forward a **basic scenario** for the five countries depicting the evolution of the level of education in populations of working age. This scenario is based on one finding, one hypothesis and one consequence:

- a speeding-up in the rise in levels of education achieved by the generations of the 1970s and '80s,

- a slowing if not a stabilisation in the rise in levels of education achieved by the generations of the 1980s and after,
- a slowing in the rise of the average level of education of the population of working age.

The synthesis of national reports (Germe, 2001) sets out to check how far this scenario applies in each country, bearing in mind the demographic pattern of each (1.1), and then tries to pinpoint the variables likely to affect it (1.2). In order to describe the main results, we shall draw heavily on the synthesis report, from which we shall quote at length.

3.1.1. **Study of the data: towards stabilisation of the rate of entry to higher education**

The analyses produced of changes to European education systems were based on a study of the behaviour of the generations born after 1970 in respect of the acquisition of qualifications. What happened to the generations that followed the 1970 generation? The answer to this question is not that obvious. The qualifications structure of a generation stabilises around the age of 30 years. The latest generation about which something definite can be said is thus that born in 1970 as it is now aged 30 years. The qualifications structure of generations born later than 1970 is not yet completely fixed, and some are still pursuing initial education. It is therefore necessary to hypothesise as to their future behaviour. Nonetheless, at least up until the 1980 generation, we know with some precision the proportion who will complete long secondary education (they are already 20 years old). It is only possible to hypothesise, however, about their higher education behaviour.

3.1.1.1. *Changes in the pace of educational expansion*

3.1.1.1.1. Educational expansion among generations born before 1970 (Reprise)

Retrospective analysis of the post-compulsory education pursued by the generations born between 1940 and 1970 illustrates the sharp rise in levels of education from one generation to another in the various countries studied: France, the United Kingdom, Italy, Germany and Spain. However, the pace differs from country to country. Between the 1940 generation and the 1970 generation, two countries, Germany and the United Kingdom, experienced relatively modest growth in post-compulsory education in comparison with the other countries considered. But these two countries already had extensive post-compulsory education among the 1940 generation. On the other hand, three countries made rapid progress in post-compulsory education, France, Spain and Italy, but these were countries where post-compulsory education was least widespread among the 1940 generation. The proportion of the 1970 generation with qualifications higher than compulsory education was 80% in Germany and France, 66% in the United Kingdom, 61% in Spain and 53% in Italy.

3.1.1.1.2. Acceleration in educational expansion as from the 1970-71 generations [44]

In most of the countries examined, levels of education began to rise faster among the generations born in 1970 and later, i.e., those reaching the level of cat. 4 (the French *baccalauréat*) in the late 1980s and during the 1990s. This was particularly the case in the UK (1972-77), France (1969-76), Spain (1967-78) and, it would seem, Italy (1970-79). The situation is less clear in the case of Germany, which does not appear to have witnessed any acceleration since the generations of the 1950s, while the 1970-79 generations experienced a clear downturn in expansion. Thus, the 1970 generation and those around it would appear to have been at the turning point of educational expansion, marking the start of ever faster expansion that would last until the 1977-79 generations or thereabouts in France, Spain, the United Kingdom and Italy, and a slowing-down in Germany.

3.1.1.1.3. Slower growth among the 1980 and later generations?

In France and the UK, the particularly rapid rise in levels of education seen in the generations born in 1970 and later clearly slowed and gradually stabilised among the late 1970s generations, starting with the 1976 generation, i.e., the generations aged 18/19 years around 1994/95. The *maximum* rise in levels of education was thus reached by the generations born in 1976-1977 if the proportion of cat. 4 qualifications and above is taken as an indicator. In the other countries, the situation is more uncertain: a clear change of pace in Spain, and a continued rise in cat. 4 (?) but stabilisation of cat. 5 in Italy. However, many indices suggest the firm hypothesis that there was a *slow-down*, if not a halt, to the rise in levels of education among generations born in the late 1970s and early '80s in these two countries. Germany presents an atypical profile since enrolments at level 4 slowed ten years earlier, starting with the 1970 generation, but continued at a slower pace among subsequent generations. It is plausible that the various countries examined entered into a period of stability of levels of education with the generation born in 1980 and later, with the exception of Germany.

---

(44) For a detailed discussion of these results by country, see Germe (2001, 1.1 and 1.2).

3.1.1.2. *Towards the end of the (relative) abundance in the labour market of young people with qualifications?*

3.1.1.2.1. General demographic decline

Demographic patterns differ in the five countries, but as a general rule the size of each generation has been falling, albeit at different rates and dates and over different periods in each country (cf. Annex 1.3, Chapter 1). In Italy and Spain, the fall is considerable among post-1980 generations. France and the UK experienced a demographic decline among the 1970s generations, and a stabilisation among the 1980s generations after a slight rise in the late 1970s and early 1980s. Germany, on the other hand, has experienced demographic growth among post-1980 generations. This means that distinctions have to be drawn between changes in the proportions of people gaining qualifications in each generation, and changes in the numbers of people with qualifications entering the labour market. Growth in the one, even strong growth, does not necessarily mean growth in the other. Moreover, depending on the sizes of the generations entering the labour market and the sizes of those that they replace (the over-65s), educational expansion may not have the same impact on the overall qualifications structure of the active population and thus on the availability of qualified labour.

3.1.1.2.2. Towards stagnation and even a reduction in the flow of qualified persons entering the labour market

In France and the United Kingdom, and especially in Italy and Spain, the strong rise in the level of education in every cohort in the 1970-76 generations generally over-compensated for the declining birth rate in the 1970-80 generations. Because of demography and/or stabilisation of the rise in levels of education, the post-1980 generations provided an output of persons with higher education qualifications (cat. 4 + cat. 5) over the next ten years that declined (Spain) or at least remained stable (France, UK, Italy?) in comparison with the preceding period. In the case of Germany, output may rise until 2010 but should thereafter decline. We must therefore expect a *relative decline* in the flow of qualified persons entering the labour market from 2000-2005, and from 2010 in Germany, for (at least) ten years. This trend marks a break from the preceding period, which had instead seen output generally growing as a result of largely unprecedented acceleration in educational expansion.

3.1.1.2.3. A slower rise in the qualifications level of the population of working age

As the generations advance and continuing education and training have (currently) little impact on the evolution of the qualifications structure of the labour force, this fall in the number of labour market entrants with qualifications is leading to a slower rise in the level of education of the population of working age. However, the generations that entered the labour market in the years 1990-2000 have broadly contributed to this rise, which has been continual since the end of the War.

3.1.1.2.4. This will lead to a change in regime

To differing degrees and in a variety of ways, the rapid rise in levels of education among the generations of the 1960s, and especially the 1970s, came about against a background of an increase in highly skilled jobs matched by relatively low growth in employment and a high level of unemployment. For these reasons, employers benefited from an employment market with at least a relative abundance of young workers with rising levels of qualifications.

What is happening now is a less rapid rise in levels of education among the active population, a slow-down in the flow of young people with qualifications entering the labour market, a reduced level of unemployment, and faster growth in jobs. Companies that have experienced the increase in numbers of young people with qualifications will gradually find themselves in a very different situation, characterised by smaller numbers of entrants with qualifications. The impact of this phenomenon will be accentuated by the retirement of the numerically large generations of the late 1940s and later, who were already better educated than their predecessors. Employers' perceptions of this "reverse trend" or "change of regime" may be exacerbated if the economic situation remains strong: they will then have to share a less plentiful young labour force with qualifications. They could as a result be moved to draw on the resources of the staff they have in post, particularly the generations aged 30-40 years, who are experienced and highly qualified.

In this situation, companies may be expected to adapt, and this will be reflected in changes in internal labour markets, especially in internal mobility, a range of labour loyalty and recruitment policies, and a changed job structure.

3.1.2. Elements of uncertainty: Education policies and young people's behaviour

The hypothesis of stabilisation in the qualifications structure of the post-1980 generations is the element of uncertainty in our basic scenario. It rests essentially on a study of the rate of completion by these generations of long (upper) secondary education (i.e., cat. 4 qualifications such as the *baccalauréat*) in the various countries. This rate determines entry to higher education. The hypothesis is relatively weak because of the shortage of available data on the behaviour of post-1980 generations in the education system. Is it nonetheless plausible? "Do the trends currently seen indicate a lasting shift in the pattern of change observed in the past, or are they the result of temporary economic factors which may change again to varying degrees in the different countries as behavioural policies evolve?" (Germe, 2001).

Two factors were examined in an attempt to answer this question: firstly, continued study after the end of compulsory education, and university entrance, which are key points in the development of institutional policy for (initial) education, and secondly, young people's behaviour in relation to continued study, or the demand for education.

3.1.2.1. *The educational "thresholds" in question: institutional arrangements*

3.1.2.1.1. Weak impact of education policies

The acceleration in the rise in levels of education resulted initially from education policies. Most countries adopted policies of voluntary educational expansion in the 1980s, when the generation born in the 1970s and later were making their way through short, and then long, secondary education. France, for example, set itself the target of 80% of an age group reaching *baccalauréat* level, and the United Kingdom set a goal of 60% of an age group reaching the same level, or the equivalent in vocational education. It is difficult, however, to explain this acceleration simply by way of the education policies adopted by the various countries since they were only relatively effective, as can be seen from the experience of these two countries. The targets were not reached in either, although France easily came closer to its target than did the United Kingdom.

3.1.2.1.2. Unified and diversified systems

We have hypothesised (Chapter 1, paragraph 1.4) that the rise in levels of education, of varying significance, was the result of the overall characteristics of each education system, and we sought to distinguish between two broad types: unified systems and diversified systems. The former raise levels of education structurally, while the latter leave greater room for the attractions of the labour market, especially for those pursuing vocational education.

"France and Spain seem to be two countries with heavily unified education systems. This unity may help to explain these two countries' ability to achieve particularly rapid growth in levels of education among recent generations, enabling them to catch up with other European countries.... The existence of vocational tracks not unified with general tracks in Germany and the United Kingdom thus probably helps to explain the smaller increase in levels of education than in France and Spain. Vocational training in the one, and direct entry to employment in the other, remain very attractive. The pool of young people likely to go on studying, particularly in higher education, is therefore reduced, while young people in vocational education, in France especially, are still able to go on to further study."

3.1.2.1.3. Institutional limitations

The basic scenario contains one genuine unknown: will the proportion of each generation entering upper secondary education become stabilised? This is now a realistic hypothesis, which would automatically lead to overall stabilisation of levels of higher education. There are thus two areas for intervention which might change this scenario or move it in a different direction, and these need to be looked at country by country. The particular institutional arrangements of the various countries' education systems may influence these areas. The question of how vocational tracks in countries with diversified education systems will develop obviously depends, for example, on the policies that may be adopted to increase the proportion of young people reaching a higher level. In the United Kingdom, for example, "...the Government is establishing a more transparent full-time vocational track via apprenticeship which will open up a more transparent route towards a Level 3 NVQ (upper secondary vocational qualification) or a qualification that is recognised as equivalent. This route will lead those who choose towards a university qualification similar to the French BTS which may be taken full-time or part-time while working. The Government has thereby set the target of adding 20% of an age group to the 30% currently enrolling in university" (Steedman, 2000).

3.1.2.1.4. Will stabilisation of the proportion of each generation entering upper secondary education be confirmed?

The question takes different forms in different countries. In some, notably France and Italy, very significant proportions of recent generations (maximum 66% and 70% respectively) already reach this level, which suggests that further growth will be difficult. If behaviour remains constant, a threshold has doubtless been reached. On the other hand, this proportion is still appreciably lower in the United Kingdom, for example, which is as yet far from reaching its goal of 60%, and it is around 50% in Spain (cf. Annexes 4.1). Room for manoeuvre is therefore not the same everywhere.

In the unified systems, much has already been done to diversify tracks and to lead those who are able towards level 4 via long secondary general or vocational education. In the diversified systems, on the other hand, the attractiveness of long and short vocational tracks, and of the labour market, holds back study leading to level 4. "In the case of Germany, this attractiveness is not in itself a decisive obstacle to study leading to level 4, since young people can enter an apprenticeship after reaching that level. The situation is different in the United Kingdom, where the absence of attractive long vocational tracks leading to level 4 reduces the opportunities for continued study."

"...In total therefore, with the exception of the United Kingdom, existing institutional arrangements do not provide any significant room for intervention to encourage further study after compulsory education." The future development of post-compulsory secondary education will not therefore invalidate the basic scenario, at least if arrangements remain as they are. Obviously, there is potentially the possibility of increasing the rate of entry to level 4 by accepting new tracks and systematically accepting greater heterogeneity in the population at that level. But this does not seem to be an option envisaged by the various countries."

3.1.2.1.5. Retaining people with difficulties at the end of compulsory education

Future development in the rate of entry to level 4 might, on the other hand, depend in the years to come on circumstances at the time when young people finish compulsory education. In the countries with a unified system, such as France, Italy and Spain, an increase in an already high level could only result from a reorganisation of lower secondary education, which is part of compulsory education. This might lead to a reduction in the population who find themselves in difficulties when leaving compulsory education and, as is well-known, require particularly complex intervention.

"In the countries with diversified systems, the situation may be different. Since the proportion going on to level 4 is lower, lower secondary education is under less pressure. The quest for higher levels of education is therefore more a matter of creating attractive courses for those leaving compulsory education. This is particularly the case in the United Kingdom because of the lack of meaningful vocational education tracks after compulsory education. In Germany, the issue might be put in terms analogous to those in unified systems, implying a change in the balance between those taking the *Abitur* and those entering the dual system, which seems unlikely, however."

"In the light of this analysis, it is tempting to suggest that only the United Kingdom has significant room for manoeuvre to permit a further rise in levels of education in the immediate future, leading to a change in the basic scenario."

3.1.2.1.6. Evolution of entries to post-level 4 education

"Take-up of higher education appears to be a crucial factor in the stabilisation or rise of levels of education." The increase in the proportion of each generation reaching the portals of higher education has been accompanied by wide variation in students. "The first symptoms of growing difficulties are a rise in drop-out and failure rates in higher education, and sometimes a worsening of study conditions for students. The responses to these difficulties are well-known: a broader range of academic courses, and a more vocational emphasis, the development of short higher education courses outside universities, and a multiplication in levels of qualification. These institutional changes are far from complete. Their success will largely govern opportunities for moving on from satisfactory completion of level 4 to level 5."

The issue of the future evolution of higher education is itself a research topic that has been addressed by other TSER networks (such as SESI, Higher Education System and Innovation). Some countries (particularly Germany) have made significant contributions, to which we shall refer (Haas, 2001). For the purposes of the EDEX research, all that matters is the proportion of people leaving higher education, which can be broken down into cat. 4 and cat. 5. Looking forward, and allowing for unknown factors, we examined in particular the rate of entry to higher education represented by the proportion of those with cat. 4 qualifications.

"It is striking to find that in a number of countries, it appears that we are moving towards stabilisation of entries to higher education. This is the case in the United Kingdom, Germany, Italy and, apparently, France. The reasons are probably complex. Firstly, they have an institutional dimension. But they also relate to the emergence of new behaviour and a shift in educational demand at this level, which needs to be examined in detail."

3.1.2.2. *Behavioural factors*

Political will and institutional changes are the necessary conditions for extending the period spent in education and raising the level of education of cohorts passing through education systems. However, as was shown in Chapter 1, they are not sufficient. The decisions made by young people and their families also play a key role in the take-up of further study – subject, obviously, to the constraints of the particular institutional arrangements.

The results above show that the hypothesis that entries to higher education have stabilised is plausible in a number of countries – the United Kingdom, Germany, Italy and, apparently France – given institutional arrangements and what are in the final analysis fairly reliable assessments of the room for intervention. The hypothesis rests on the implicit assumption of relatively constant behaviour by young people in their demand for education and in the way in which they express this. The network examined these two factors.

3.1.2.2.1. The crucial influence of economic factors on educational behaviour

"One explanation for the acceleration in the rise in levels of education among the 1970s generations is the conventional idea that educational behaviour was heavily influenced by the situation in the labour market in the various countries considered. Youth unemployment, which was significant in most of the countries concerned from 1974, might have encouraged younger people to withdraw from the market, which was possible because of the education policies pursued in the different countries. These policies were perhaps motivated by a desire not only to raise the level of skills of the active population, but also to restrict youth unemployment, if only by keeping a growing proportion of each generation in the education system. For these young people, not only did the opportunity cost of studying go down because of both the likelihood of unemployment and a frequent fall (at least in relative terms, if not in real value) in the wages paid to young people, but the acquisition of more education might also have seemed to be a way of getting a job more easily and at a higher salary."

It may therefore be hypothesised that the behaviour of the generations born in the 1970s, who finished compulsory education in the years 1980-85, was influenced by the difficult situation of their elders (the 1960-70 generations) in the labour market, and that once they had agreed that education might help, they decided to take their studying as far as possible. The rapid growth in this phenomenon of "inter-generational learning" – changes in behaviour between one generation and the next – were not "linked directly to the situation in the labour market at the time but to the situation in the market of their elders." This behaviour was further encouraged or made feasible by policies creating the requisite institutional conditions, which only came about in the 1980s, since they could not be planned and put in place at once. This may explain why it was the generations born in 1970 and later that saw the clear acceleration in the rise in levels of education".

The same hypothesis of "inter-generational learning", as J.F. Germe argues further, can explain the pause in the rise in levels of education among the generations born in the 1980s and later: "the generations born in the late 1970s and early 1980s had to decide whether to continue studying in the late 1980s and early 1990s. The recession of 1992/93 for the first time made it more difficult for all those with qualifications to find a first job, in contrast to the past, when those with qualifications from short and long higher education had been relatively secure. The upshot was lower-grade jobs, lower salaries and longer periods of unemployment for all categories. It can at least be hypothesised that the advantages and protection given by qualifications were less obvious than in the past. The generations born in the late 1970s and later (the 1975 generation being aged 15 years in 1990) became aware to varying degrees of the situation encountered in the labour market by their elders in the early 1990s and modified their educational behaviour."

Thus, given the difficult situation of their elders, and especially the belief that a high level of education was the best guarantee against those difficulties, young people born in the 1970s were keen to go on studying, as soon as institutional arrangements allowed. Young people born in the 1980s, on the other hand, changed their behaviour once more in view of the greater difficulties encountered by those "overqualified" generations, declining to continue as far as possible: "Thus (in the case of France), further study did not necessarily appear to be a good decision in principle but a decision that might secure a slight advantage."

In order to confirm these hypotheses, Germe (2001) examined and compared students' decisions in relation to academic orientation in the five countries.

These analyses, although restricted to a few countries, point to economic factors influencing the shift in educational behaviour. Will there be a continuation of the hypothetical stabilisation of educational expansion associated with more prudent behaviour in terms of educational consumption in view of the uncertainty prevailing in the labour market? Will the fall in unemployment and the renewal of economic activity in the late 1990s give another boost to education?

"*A priori*, the effects are contradictory. On the one hand, the growth in employment and the reduction in unemployment, and the rise in wages and salaries for young people, increase the opportunity cost of continuing to study and tend to reduce the behaviour of seeking refuge within the education system, but on the other hand, this is likely to increase returns to study. In the absence of more detailed knowledge of the links between the demand for education and the situation in the labour market, it is impossible to anticipate future developments. In the case of France, it would appear that family decisions have again changed since 1998: dislike of general courses has ceased, and students' desire to opt for the vocational sector is stabilising. In this country, we may see an acceleration in the rise in levels of education, which would invalidate the hypothesis of stabilisation."

"One relatively firm hypothesis is that demand for education will become more variable and more flexible and will mirror socio-economic developments more closely. At all events, a tension will develop, posing a problem for education systems, between highly flexible behaviour among young people on the one hand, and the necessary rigidity or lack of flexibility of educational institutions on the other, especially where these are arranged in separate tracks. It is likely that there will be occasions when there are too many or too few students, leading to variation in the crude effectiveness of educational institutions and significant changes in conditions of study from one year to another" (Germe, 2001).

This hypothesis of greater flexibility in educational demand may lead to new kinds of links between initial and continuing education, between remaining in education and a return to study.

3.1.2.2.2. Remaining in education vs. return to study

"The decision to continue with education cannot be reduced to the decision by young people within the education system to go on with initial education. One significant variable affecting a further rise in levels of education is the range of opportunities for returning to study during active life offered by the education system, and the use made of those opportunities by people in work. If the above hypothesis of greater flexibility in young people's educational behaviour were confirmed, this would lead to greater variability over time in the numbers remaining within the education system, in accordance with the employment situation. Another consequence of these changes in behaviour might be greater demand for a return to study, particularly at the start of active life."

In the first case, initial education might take longer, even regardless of the level of qualifications achieved, young people merely taking more time to reach a given level of education, either because they are splitting their time between work and study, or because they alternate periods of education and periods of paid work. These behaviours would largely be governed by the job situation and the opportunities available. It may be that this would also lead to further educational expansion, especially in higher education, so that young people had the opportunity to continue studying to a higher level by means of these comings and goings between education and work. This is only possible if systems of initial education, especially unified systems, take the necessary steps to arrange suitable courses and certification.

In the second case, young people might decide to stop studying for a time and to continue later by way of continuing education, depending on the economic situation and the job opportunities available to them. This would in effect be a postponement of "initial" education until after some years of active life. Here too, education systems would need to adapt in order to cater for private students, or even to recognise and validate learning gained through work experience.

Three factors make these scenarios probable and may help to increase their importance in the future. "The first is that the rise in levels of education has been reflected in a higher proportion of young people, in all the countries, having a level of education corresponding to completion of upper secondary education." This provides a potential for easier return to study since it would build on a broader base of general education. "The second factor relates to the demographic context: while the rise in the level of education of the population of working age is less rapid than in the past, it may be supposed that people in work might be encouraged by their employers to return to study because of tensions in the labour market in certain occupations. The third factor is political. The notion of lifelong education may lead to greater opportunities for continued study."

In either case, this might throw into doubt the result obtained in the first stage of this project (Chapter 1), which suggests that a generation acquires the essentials of its qualifications within the system of initial education, before the age of 30 years. Firstly, because the acquisition, through formal education and training, of qualifications would extend well outside the framework of initial education, and secondly because the qualifications structure of each generation would not become stabilised until after the age of 30 years, as is already the case in Italy. This could lead to a different model of acquisition of qualifications by the active population, the continuing education system, lifelong learning, becoming more important relative to the initial education provided within the education system.

If there were to be continued educational expansion measured in terms of qualifications, this new model of education, focusing more on education throughout active life, would need to be "certificated". This raises the complex issue of the recognition of learning and skills.

"Some indicators suggest that the situation is changing.... We are witnessing the development of systems of skills certification in a number of countries. The United Kingdom has set up NVQs. In France, new forms of certification have emerged, and it is proposed to establish a national list of qualifications. Spain plans a similar initiative. Only Italy and Germany remain aloof from these developments. However, it must be stated that these initiatives and new forms of certification, where they exist, are developing only slowly. They are not likely to have much effect on the barrier of 30 years of age for a long time. The variable likely to shift the 30 years barrier is therefore very probably return to study after the upper secondary level among the population aged 25 to 35 years" (Germe, 2001).

Two factors are therefore likely to cast doubt on the hypothesis of stabilisation of educational expansion:

- greater flexibility in demand for education, and
- the opportunity for young people to choose between continuing to study in initial education and continuing to study after entering working life.

The hypothesis of stabilisation of educational expansion therefore seems realistic in France and the United Kingdom, likely in Spain, and possible in Italy and Germany. It is weak nonetheless, given the question marks that remain over both young people's behaviour and the varying degree of political will in the various countries to go on raising the level of young people: this seems weak in France, Germany and Spain, and stronger in the United Kingdom and, until recently, Italy.

Young people's behaviour in relation to demand for education is also heavily dependent on the situation in the labour market, which reinforces the uncertainty of there being a stabilisation of educational expansion. "Employers' behaviour may also play a part in bringing about a continuation or a stabilisation of the rise in levels of education. Given demographic considerations and the recruitment difficulties which they face, employers are likely either to try to recruit young people early by persuading them to leave the education system, or to exert pressure on governments to give a boost to the rise in levels of education in order to maintain an abundant supply of young people with qualifications."

3.2. Demand for skills

Companies are suffering from a general shift in the economy which is bringing with it heavy competitive pressure, new demands for production and innovation, and ever faster changes to their organisation and labour force as a result of technological developments, especially in communications and information. It is generally thought that this shift has accelerated extraordinarily fast in recent years, producing more and more uncertainties over the evolution of the markets and a much reduced ability to foresee what adaptations will be necessary.

These developments strongly influence employers' behaviour, especially how they define, procure and manage the human resources that they need.

The surveys carried out among employers show (Chapter 3) that the vast majority of them have taken advantage of an increasingly well-qualified supply of labour in order to cope with this situation. The level of education of staff has risen overall because of the arrival of younger generations that are increasingly well qualified and the retirement of older workers who belonged to generations in which academic qualifications were still unusual. By consuming more qualifications, employers have bought more skills. They believe that these will be called for in the short and/or the long term: *in the short term* because jobs require new technical skills and are performed under more complex conditions requiring greater understanding of the working environment, the greater social skills associated with team work, and so on, and *in the long term* because increased skills mean that it is easier to anticipate occupational changes (in job profiles) and organisational changes (restructuring, job substitution, etc.).

It can therefore be said that through their positive reaction to educational expansion, employers have supported the changes in education systems initiated essentially by the State and by families. However, it has also been shown (Chapter 2) that this behaviour is heavily influenced by the state of the labour supply and its evolution: "...companies make do with the labour available in the labour market, which they draw from the education system or from external, internal or particular job markets, in order to solve their problems of adaptability of skills in a largely unpredictable technical and organisational environment. While there is no general shortage of skills, companies build the skills they need out of what the education systems contributes. Skills are jointly produced by the education and employment systems, the latter being structurally obliged, for reasons of medium and long-term planning, to adapt the skills produced by the education system" (Chapter 3).

The action of the forces driving economic change has led to a growing demand for skills, especially the types of skills which employers associate with qualifications. Two questions may be put about the future, to which these results may provide some kind of an answer. Will this growing demand for skills continue in the future? And how will it be satisfied, bearing in mind the changes that can be foreseen in the supply of people leaving the education system with qualifications and the resultant renewal of the active population?

The answers given by the network (*cf.* Bibliography) were drawn together by L. Frey and E. Ghignoni in their international report (Frey, Ghignoni 2001).

3.2.1. Towards an increased need for skills...

The first question that arises is therefore that of how the forces driving economic change will develop, as it is they which generate new skill requirements.

The most significant driving force is without doubt the almost universal opening up of previously protected national markets to **international competition**. The result is greater competition and a ceaseless increased quest for new margins of productivity, which have a considerable influence on company organisation. In Italy, for example: "The widespread foreign interest in some sectors of the Italian economy has forced companies to redefine their own strategies with a view to maintaining or increasing competitiveness. This is happening in major industries that are potentially subject to growing price competition from emerging countries. Since the scope for recovering competitiveness through technological innovation is very restricted in the case of most 'traditional' forms of production, these industries have been forced to look to strategies of product and service quality and, with this aim in mind, to improve their own models of organisation (successfully, for example, in the textile industry)."

Technological innovation is another "driving force" behind current changes in production systems, the most "invasive" manifestation of which is the spread of new information and communication technologies. "Unlike previous waves of progress, which essentially affected production activities, the new technologies are spreading to all sectors via control functions and production process co-ordination. These new technologies are based on the 'codification' of knowledge, which places the emphasis on logical, symbolic abilities, an abstract approach and the mental representation of production processes – i.e., intellectual skills – as distinct from manual and executive skills."

Lastly, the third driving force behind change, is "the adoption of innovative strategies which influence **company organisation**, sometimes radically. The principal reference models are those of 'flexible specialisation' (on which Italian industries concentrate), 'total automation' and 'subtle production', which derives from the Japanese experience" (Frey, Germe, Ghignoni, 2001, p. 85).

Everything suggests that these forces of change will not let up in the pressure that they place on the economy, but rather the reverse. The pointers given in the national reports agree on this. In consequence, companies will see their need for skills grow.

Thus, "if the realistic hypothesis is proposed that the number of companies and sectors exposed to market globalisation will tend to rise over the next ten years, and that technological innovations and new forms of organisation will spread and affect a growing number of companies and sectors in the five countries examined (as exemplified by the banking enterprises studied in detail), it can be deduced that there will also be an increase in the years to come in the demand for professionals and managers particularly capable of adapting to handling factors of change, and for social and cognitive skills among middle management and staff in general (skills facilitating entry to continuing vocational training)" (Frey, Germe, Ghignoni, 2001, p. 109).

Moreover, these trends can only be strengthened if industrial policy in the five countries is encouraged (as international bodies suggest) to expand innovation and technological monitoring skills, and research and development skills, in the aim of maintaining international competitiveness. There is therefore good reason to think that companies' skill requirements (quantitative and qualitative) will continue to expand and grow, one of the consequences of which, judging by the behaviour of employers seen in the recent past, will be greater use of people with qualifications, especially young graduates.

3.2.2. ...which is more difficult to meet by recruiting young graduates

Will it be possible to use more people with qualifications, and especially young graduates?

As has been stressed throughout this work, companies express their demand for new human resources in terms of skills rather than qualifications, and it is the quantitative and qualitative need for skills that is growing. But it is obvious that in order to meet this need, companies have often chosen to recruit more highly qualified and/or educated young people rather than to try systematically to retrain staff in post and/or to promote via internal markets, as the study of the banking sector showed. It has been seen (Chapter 2) that there are economic reasons for these decisions (greater ability to adapt, lower costs of adaptation and induction).

However, we should not underestimate the part played by qualifications in the recruitment process, or companies' use of them as a selection criterion in their search for competent workers, including experienced workers, in a heavily externalised labour market. The use of qualifications as a standardised signal of the skills that companies are looking for is therefore tending to increase.

Thus, the question for the future raised by our work is whether the output of persons with qualifications by education systems will be able to provide the necessary skills for companies that are accustomed to giving priority to recruiting young graduates.

Judging by the studies of the outlook for education conducted in each of the five countries taking part in the project, it appears that there will, assuming constant behaviour on the part of education systems and young people, be an (admittedly relative) downward trend in the number of young graduates entering working life because of demographic decline and/or the likely stabilisation of rates of successful completion of upper secondary education (cat. 4) (cf. point 1.1.2.2 of this chapter). There is obviously a strong presumption that the output of graduates (from level cat. 4 or higher) will at best be constant, and the hypothesis that growth will continue in coming years seems not to be tenable, except perhaps in Germany.

The plentiful output of young graduates seen in the labour market during the 1990s, from which human resources managers were able and wise enough to take advantage cannot be envisaged in the next ten years, which is likely to mean a certain change of context.

However, this *a priori* unfavourable situation in respect of entrants to the labour market will not prevent a continued rise in the average level of qualifications of the active population in the five countries because of:

(a) the ageing of the generations which have entered successively since 1940 and have brought with them continually growing flows of qualifications (as a result of the combined effects of a slight upward demographic trend and/or the continued increase in rates of education), and

(b) the retirement of numerically large generations (the post-war baby boom) which were automatically less well qualified.

Overall, the active population in each of the five countries has thus acquired more and more education, more and more qualifications and especially, given companies' strategies, a better chance of being trained through continuing education. Since young workers with qualifications will become (relatively) less plentiful, companies may well find themselves obliged to turn increasingly to staff in post and to train them, and this will be easier because of their higher level of initial education.

More generally, as skills may be acquired in a variety of places and through a combination of many kinds of learning – school, work experience, continuing education, social life, etc. – we may wonder what the most appropriate (effective and efficient) combination of methods will be in order to produce the skills needed by companies in the near future.

3.2.3. Tensions and skills output

3.2.3.1. *Lessons from the banking sector*

The comparative analysis of the banking sector revealed the possible "tensions" generated by new forms of organisation and human resource management policies directed towards recruiting young graduates. These tensions relate particularly to recruitment and have implications for the whole of company personnel management. The main tensions will be set out here, as described by Bruniaux (2001).

(a) How can emergent unskilled or low-skilled jobs (such as distance telephone services for simple standardised operations, which have become widespread in the United Kingdom and are expanding in Germany, or direct marketing in France) be staffed when they are managed from outside the internal market and have high turnover?

(b) How can commercial skills be tied in with technical banking skills? Now that the emphasis is on commercial skills in basic-level jobs, they have lost some of their emphasis on banking. If the trend towards "commercial only" becomes fixed, how will the culture of banking and the skills peculiar to banking that are needed for building a career be learnt? Without both these skill areas, development seems difficult. "... These basic trends may lead to reorganisation, as in Germany, where the strategy of focused banking is giving rise to a new division of tasks: the handling of 'small' customers is standardised by means of expert computer systems, and 'skilled' advice is concentrated in specialist centres, making it possible to recruit non-specialist commercial staff from other sectors and to remove responsibility for this from the managers of small branches.... In the case of French banks, with their large-scale recruitment of purely commercially trained graduates of *bac+2* (short higher education), the problem is whether they will have the skills to replace as planned when they were recruited the many branch managers who will retire in a few years' time: the answer appears somewhat uncertain since there was talk, in the banks visited, of changing the way in which the network is organised, so as to leave them merely small commercial units, while administration and the back office were regrouped in management centres" (Bruniaux, 2001, p. 22).

(c) Lastly, there is the likelihood of "generation shock", which can occur in all jobs in all countries (except perhaps expert posts) since individuals of different generations are found in the same jobs, the younger having far more qualifications than their elders. "These tensions relate both to the everyday way of working and to career prospects... We have therefore not seen the last of the problems of cohabitation between those with different levels of qualifications in low-grade jobs. Since there is a plentiful supply of higher education graduates in all the countries studied, and not all of them will succeed immediately in finding a specialist or management job, difficulties are still likely to manifest themselves, even where recruitment and career planning are highly sophisticated" (Bruniaux, 2001, p. 23).

Will these problems be made more acute or be mitigated by a reverse trend, i.e., by a less plentiful supply of graduates? To what extent will employers be able to backtrack on their practices if there is a shortage of people with higher education qualifications, or if they become harder to recruit, or simply more demanding? EDEX research does not provide a straightforward answer to this question. The issue of whether the banks intend to go on recruiting at a higher level has been raised as well, however (Bruniaux, 2001 pp. 24-25):

"In France...it is conceivable that subsequent adaptations to developments will increasingly take the form of recruitment of young graduates: many human resources managers state that despite numerous training programmes, there are still considerable gaps in a certain number of key activities between the human resources available, their potential for retraining, and the human resources required" (which call for a combination of technical skills, a high level of general culture and behavioural skills). "Furthermore, the large number of retirements expected from 2005 mean that the current period must be used to recruit the staff needed to rebalance the age pyramid and to replace those who will leave.... In Spain as well as France, specialist jobs, which are expanding, generalist management positions at the heart of the commercial network, and even future senior management posts, are being given to graduates of long higher education courses, which is a complete break with the tradition of the internal market.... In Germany, the upward trend in the level of young people recruited should still continue, given the recent general tendency to reserve new professional jobs, which are growing in number, for graduates.... In these countries...improvements still need to be made to methods of continuing education and career management, with provision for new forms of horizontal mobility, changes to banking staff grades, the possibility of disconnecting salary at least partially from job level, etc., in order especially to retain candidates 'with potential'.

Lastly, in the countries where very rigid internal markets coexist with very informal or even weak provision for training within the sector, the question is whether the methods of adapting to restructuring adopted to date will be adequate in a context where the pressure of international competition will increase. Given the high cost of labour created by staff ageing, and a slight weakening in internal markets, is there not a danger of layoffs? This is exacerbated by the more flexible approach to recruitment adopted so far in Italy and Spain, which is unlikely to lead to the establishment of a continuing education policy, the success of which depends on retaining the staff who benefit. It might be said that the staff who need it are precisely those who have been with the company for a long time and have not had the chance to raise their level of skills. But they are not generally the most receptive to training opportunities. Moreover, it is in these countries where continuing education is poorly developed and in the United Kingdom that those with operational responsibility seem to give the least thought to the skills that will be needed in the future and the means of providing for them. It may be supposed that the nature of the sometimes violent adjustments that are still needed will depend on the strength of competitive pressure" (Bruniaux, 2001).

A change in context may obviously make the issue of layoffs less sensitive. But there would then be an acute problem of in-house staff training, which would have to be faced.

3.2.3.2. *The demand for specific skills*

There is a crucial interaction between the education system and the production system in the production of the skills needed for companies to operate. This joint production is made wholly necessary by the unpredictability of needs in the medium and of course the long term. "The sheer incompleteness of information about the skills market is intrinsic to the nature of human labour and economic development. Globalisation, technical progress and the growth in monopolistic competition tend to shorten the timescale of reliable information... This chaotic dimension applies to the demand for skills... It also applies, and this idea is less widespread, to the supply of skills... These interactions (between initial (academic and social) education and the series of productive situations occupied) are strictly individual and hence strictly unpredictable. All the more so since individuals will in the course of their working lives move into jobs which will use technologies unknown at the time of initial education" (Planas *et al.*, 2000, p. 74).

Armed with this very general conclusion, "we may reasonably hypothesise that in the five countries over the next ten years there will be...no shortage of general skills but that there may be (localised) shortages of specific skills" (Frey, Ghignoni, 2001).

"The shortages of specific skills which already exist in the five countries will probably grow over the next ten years in jobs overlooked by education and training systems and/or for which continuing education proves too costly... It cannot be assumed that these shortages of specific skills will in the next ten years lead to effective pressure from the production system on the education system because many employers (particularly in Germany) think that current changes in education and training systems (and the consequent expansion in education) are responsible for the shortages, and because attempts to reform vocational education (such as those being made in the United Kingdom) are meeting with serious obstacles...

... On the other hand, it may be hypothesised that these shortages, together with the growing problems of selecting and making best occupational use of young people and adults with increasing levels of qualifications, will in the near future lead to greater continuity between initial and continuing education. However, the issue of the cost of continuing education (reduced by higher initial education) to retrain staff in new technologies, procedures and products will lead more and more companies (as is the case in France, Spain and Italy) to concentrate their continuing education and training strategies on the employees most concerned with innovation, usually those who have been most highly educated through recent initial education." This means better educated young people rather than less well-educated adult staff.

3.3. Towards an increased role for continuing education?

As was said in the conclusions to Chapter 2: "Companies are undergoing technological and organisational changes which are leading, in terms of HR management, to a greater need for skills and flexibility. More skills have to be recruited, and these skills have to be better suited to needs that are not only changing but are largely unforeseeable: the number of skilled jobs has risen, while the skills required to carry out jobs have expanded accordingly and can seldom be predicted in the medium term."

All appearances suggest that these changes, and the skills associated with them, will increase.

Recently, recruiting staff with more qualifications has provided companies with a work force indicated to be more knowledgeable in the short term, and hence better able to adapt to changes in the work place by virtue of the longer time spent in more general, more transferable education. Even though it may not be a stated aim, recruiting people with qualifications should, in the long term, reduce retraining costs: since they are better educated, people will also be likely to benefit more quickly and easily from vocational training given in the form of continuing education. It has been shown, in the case of banking, that this has repercussions on the functioning of the internal markets because of the new link between initial and continuing education.

The reduced output of leavers from initial education systems does not suggest a medium-term scenario based on no change in employers' behaviour. Their growing skills requirements can no longer be met by as large-scale use of young graduates as in the past. Satisfying these needs will mean a shift in the supply of skills towards sources other than certificated initial education, even though this will continue to play a key part in the renewal of the active population.

"The response of initial education systems will be quantitatively and qualitatively significant. The education system supplies qualified people, whose level of qualifications may be associated with the skills they possess and/or the probability of acquiring the skills required by a changing production system in time and on the job" (Frey, Germe, Ghignoni, 2001).

From the quantitative point of view, we have seen that the supply of persons with qualifications is likely to be more restricted than it has been, unless there are significant social and institutional changes or young people's behaviour alters. These changes are not improbable but they presuppose "...profound changes in education systems so that these make education available at more flexible times. This is not inconceivable. Here and there, such options are making their appearance. Changes in behaviour in choice of subject and pattern of study are actually to be seen in some countries. Different routes of entry to higher education are developing in certain countries" (ibid.).

At the qualitative level, changes in the demand for skills "may call for diversification of courses within higher education, which may govern whether levels of education rise or not. In this field, it has been seen that the five countries take quite different stances in respect of the desire to raise the level of education of the coming generations: less marked in France, Germany and Spain, and stronger in the United Kingdom and Italy, which is establishing a policy on diversification of university courses" (Frey, Germe, Ghignoni, 2001, p. 111).

But above all, these changes are likely to lead to a far stronger call for continuing education to mitigate the problems that arise. These will result from the high level of education among recent recruits, reduced training and adaptation costs because of this higher initial education, and the need to manage the tensions created by competition within companies between different generations of staff : "...if the pressure of competition (in the banking sector) increases and methods of regulating internal markets are not modified (recognition of skills and training effort, and career progression), these characteristics are likely to create serious tensions" (Bruniaux, 2001, p. 26).

In consequence it is conceivable that joint production of the skills needed by companies will in the near future make far more use than in the past of certificated continuing education and/or certification of learning in the work place. This new scenario is suggested both by the existence of an active population that has an increasing overall level of education and qualifications and is thus more capable of benefiting quickly from continuing education at less cost, and by the slow-down or stabilisation in the output of young graduates. There will thus be a shift in the balance of initial education towards (certificated) continuing education, which will cease to be initial in the strict sense of the word.

We should then have to look forward to changes in companies reflected in modifications to internal labour markets, especially in-house mobility, measures to retain staff and diversified recruitment policies.

The hypothesis of changed behaviour by young people in their demand for education may also make these changes plausible. Greater flexibility of educational demand, which may cast doubt on the stabilisation of levels of education, may also lead to young people postponing the acquisition of their "highest-level qualification" until they are working.

These possible changes therefore contain the seeds of a scenario of joint production of skills. This would make use of certification provided by continuing or lifelong education to replace a small but important part of the certificated output of initial education systems. This would presuppose:

(a) greater flexibility in demand for education,

(b) a range of possible options of remaining in initial education and returning to study after a period of occupational activity, and

(c) an increasingly significant role for continuing education in disseminating certification and/or adapting individuals' qualifications acquired during initial education to the skills demanded by companies and public authorities.

Once again, this scenario is very hypothetical. "It would probably require very profound long-term changes in employment, the labour market and education and training systems" (Germe, 2001).

Is this new scenario likely to undermine the consensus on education referred to in the introduction, which seems to have prevailed until now? This is unlikely in as much as the education and training of individuals is not called into question, either in terms of certification or of overall length of learning, since each individual will continue to have an interest in increased education. Rather, the way in which society deals with this increase in education may be affected. Continuing education may become more significant than it is at present, either by complementing or replacing some initial education. But it is not certain that this would lead to further educational expansion as this has been defined throughout this work, i.e., in terms of the *qualifications structure* of the population. It would, however, manifest itself in *longer periods spent in education and training*, which would then need to be validated.

"...The approaches and policies adopted in some countries, particularly the United Kingdom but also Spain and France, for the drawing up of skills lists and new systems of certification, reveal both some downgrading of qualifications as an indicator in the labour market, and an advance in the role of vocational education during active life. The notion of combining initial and continuing education in the production of skills is complex. The very possibility of shunting between the two presupposes that continuing and initial education are interchangeable, which is seldom the case at present (Gauron, 2000, Planas, 2001), and that continuing education will lead to certificates that are recognised in the labour market, which is also seldom the case at present despite the policies which have been adopted and the emergence of systems of certification that are more open to adults, and of continuing education courses" (Germe, 2001).

CHAPTER 4

Conclusions and policy recommendations

The rise in the level of education among British, French, German, Italian and Spanish populations is a continual process which forms part of the economic and social history of these developed countries. A phenomenon of the period since the end of the War, it has resulted from the converging strategies of the State, families and employers, all of whom – albeit for reasons that may have been completely opposite – have pushed for educational expansion.

Of these three protagonists, the State played the key role: they were the main source of funds for educational expansion, and drew up the relevant legal framework. Families have sometimes provided more support for expansion than governments expected, even in times when qualified people find it difficult to get a first job.

Though they have not explicitly played a major part in the expansion of education, employers have always had a stake in vocational education and training, and have supported this expansion if only by taking qualifications into account in recruiting staff. The State has also played a crucial role in its function of entrepreneur, by making level of qualifications a core criterion for appointments in the public sector and soaking up large numbers of new graduates (especially in health and education provision).

The strategies of each of the players have obviously influenced those of the others: governments have tried to interpret the needs of employers and to incorporate these into the expansion of education systems, particularly vocational education. Families have also picked up the signals coming from employers and have taken these into account in their educational behaviour. Employers, while participating globally in the process of educational expansion by expecting particular specialist skills, have been essentially concerned with non-formal and formal continuing education and training, the manner, amount and cost of which depend on the characteristics of the labour supply, i.e., on decisions taken earlier by governments and families.

In EDEX, the link between developments in education and the needs of the economy rests on the notion of skills. An individual's skills have been defined as the knowledge and abilities acquired, which the individual may modify at any time of life and in a variety of places, the chief ones being of course school and work. The higher an individual's initial education, the more quickly, effectively and efficiently he or she will learn. Employers buy these individual skills and develop them, implicitly through the work experience that they allow individuals to acquire, and explicitly by providing continuing education and training. Although this development of skills within a company depends on the ability to learn of each employee, it serves the company's particular aims of adapting resources. These hypotheses have proved both extremely useful and generally valid in the course of this work.

Analysing the consequences of the rise in levels of education via the increase in individual and collective skills in the labour market enabled us to move on from the classic question of the link between qualifications and employment to a more coherent way of looking at the interactions between developments in education and the economy. Both the education system and the employment system need to transform themselves; but although they are relatively autonomous, in the sense that they obey forces that are peculiar to them, their interests coincide in that the one produces and the other uses – and together they jointly produce – socially and economically relevant skills. And while they safeguard their own interests, they also develop their relationship (their joint production) in order to protect themselves as best they can against the unpredictability of long-term changes in work.

From the results of this research (1), we have selected some basic ideas which have policy implications: on the convergence of education systems (2), on the irreversible aspects of educational expansion (3), on the shift in consensus (4) and on the place of education systems in the production of skills (5).

4.1. 40 years of educational expansion in the five project countries

The EDEX project set out to identify the educational changes that had led to a huge expansion in education in five European countries. The educational careers and behaviour of the generations born between 1940 and 1980 were analysed, compared and contrasted with the education policies which governments had been pursuing. We also took into account the role of companies in the expansion of formal and non-formal vocational education and training. Lastly, the question whether these trends would continue was examined and discussed country by country. The conclusions of this work may be summed up in the following points:

- All the countries considered experienced a significant rise in levels of education in the generations born between 1940 and 1980. In the majority of the countries, this rise accelerated among the 1970s generations, and then apparently slowed among the generations of the early 1980s.

- In all five countries, the expansion in education essentially affected the initial education of each generation within the education system. This result, which needs to be qualified according to country, shows up the (as yet) secondary role of continuing education (lifelong learning) in building the qualifications structure of the population that is currently of working age. The initial education, which each generation receives in youth, leaves a lasting trace.
- The process by which each generation acquires qualifications has become longer as education has expanded but generally stops before the age of 30 years. This period of life comprises both initial education before entry into active life, vocational training via apprenticeships, and various combinations of periods of work and study. The distinction between the education phase and the work phase is becoming less and less clear, even in countries with 'school-based only' models such as France and Spain. For a growing number of individuals, the ten or twelve years following the end of compulsory education are a time of searching for an identity and position in society through education and work. However, the order in which this occurs is not immutable: there is considerable overlap between the two and a wide variety of combinations.
- The changes occurring in national education systems agree in two essential respects: a considerable fall in the number with "no qualifications" (although this category has not disappeared) and a rise in the percentage of each generation obtaining qualifications granting them entry to university at the end of secondary education. In each country, therefore, there is an appreciable increase in the average level of education of the labour supply as these generations with more education and more qualifications enter active life and "spread" throughout employment. This should not mask the fact that there is a considerable proportion with "no qualifications" in each country, even among recent generations. This sends a particularly negative signal in times of educational expansion and may lead to exclusion from the labour market.
- The similar developments taking place have far from eradicated all structural differences between countries. In 40 years we have moved from a situation of wide gaps between the proportions with no qualifications (ranging from 33% to 89%) and small gaps between the proportions with higher education qualifications (fewer than 16%) to a completely opposite situation: a drawing together of the proportions with no qualifications (fewer than 15%) and growing gaps between the proportions with higher

qualifications (ranging from 7% to 37%). Thus, the countries where education was poorly developed have caught up. More precisely, this result means that the various countries have, while expanding education, retained or even strengthened their individuality in their educational decisions. The factors that have led to the international phenomenon of educational expansion take forms peculiar to each country.

- These strong initial differences between levels of formal education and training, i.e., education and training attested by qualifications, among generations born in the years 1930-1940, are matched by equally strong differences in economic development. Such economic and educational gaps have now been reduced, although it is not possible to identify any simple causal link within the framework of this study.
- In all five countries, the main force driving educational expansion is the notion of equity. But the idea of "meritocracy", which generally guides the implementation of equality of opportunity in the school system, does not entirely solve the problem. Maintaining equality of opportunity for longer has led European education systems above all to postpone the first true differentiation within each generation until after the end of compulsory education – except in Germany, which retains its hierarchy of three types of school.
- In all five countries, educational expansion is the joint product of a) longer compulsory education, which, in effect, is creeping closer to entry into higher education, and b) an increase in post-compulsory study. The average level of education among recent generations has moved from secondary towards university and/or vocational higher education, and this has profoundly affected the nature of vocational education. The institutional emphasis of education has shifted towards higher education in all countries studied.
- The educational system is an increasingly important variable in young people's careers (education, work, transition to adult life, socialisation and first employment).
- After more or less continual growth over nearly 30 years, educational expansion speeded up radically in all the countries examined – except Germany – among generations born in 1970 and later.

The outlook:

- The most likely hypothesis for the future, in the light of the behaviour of the generations currently undergoing initial education (the generations of 1980 and beyond) appears to be stabilisation of educational expansion in the next ten years. This already seems to be a reality in France and the United Kingdom, a new development in Spain, and a possibility in Germany and Italy.

- With the exception of the United Kingdom, existing institutional arrangements do not show much room for manoeuvre in order to encourage study beyond the end of compulsory education.
- Study after the end of secondary education (e.g., *baccalauréat*) appears to be a crucial factor in stabilising or raising levels of education. It depends heavily on national policies for the development or diversification of higher education.

4.2. Convergence and divergence between education systems

The results of EDEX show the way in which the countries have managed educational expansion, which may be summarised in terms of convergence and divergence. But has there been a convergence between education systems themselves? As systems evolve, are they drawing closer together, structurally speaking?

The national peculiarities of education systems have much to do with the extent to which vocational education is integrated into a unified system under State supervision. Germany gives vocational education a central place in its "dual" system managed jointly by the social partners; the United Kingdom has no unified system of vocational education after compulsory education; and France, Spain and Italy have integrated initial vocational education into a unified system under State supervision, though responsibility may be shared between various levels of government, especially in the regions.

The rise in levels of education is certainly a key feature of the last quarter of the 20th century which is common to different European societies. The factors influencing it cannot be confined solely to the actions of the State or of individuals, or to the needs of the economy. The rise in levels of education is one of the essential components of the overall transformation of Western societies. This transformation is quite obviously common to the various European countries.

It is nonetheless worth noting that the rise in levels of education has taken place simultaneously in countries whose education systems are very different for historical, cultural and economic reasons. Yet these differences have not hindered the general growth in education. Education systems remain very different and have retained their particular national forms of coherence. They have handled educational expansion in their own particular ways.

Education systems have nonetheless been through considerable internal and structural change. The more centralised have tried to become more flexible, and the more decentralised have set out to introduce national standards or more exact common rules. Each country has found examples or ideas in other countries' systems that have helped to bring about change. There is also a certain permeability between education and training systems. But this is far from enough for us to reach the conclusion that systems are converging.

For one thing, the changes are responses to socio-economic tensions and developments, which are fundamentally similar in the different countries. Unemployment, changes in the labour market and labour organisations, rising standards of living and even growth in the demand for education, have pushed every education system to adapt. The causes of change are thus largely similar, and each system has aimed at greater professionalisation, adaptability to changes in employment, less rigid educational tracks and a wider range of courses. The objectives are relatively similar, especially in higher education, where the issues of professionalisation and diversification of courses are currently key topics. However, the responses to these needs for change have differed in the past, and still differ today from country to country. It would not be accurate to speak of a standardisation of education systems.

The fact that all countries can produce a more or less equivalent level of skills to meet similar economic needs by means of quite different education systems is part and parcel of the very concept of skills. Their vectoral nature and their joint production by systems and other places, ranging from schools to companies and including social life, are transnational, but the way in which these different elements fit together is peculiar to the society of each country.

Let us simply take one example: it is quite common for pupils and students in initial education to work while at school or college in France (Béduwé, Giret, 2001) and Spain (Planas 1990). In some cases at least, this may amount to a sort of spontaneous version of the highly formalised German dual system of vocational education. Both may turn out relatively similar skills on the basis of school learning, work experience, etc., that are peculiar to each education system (with its own rules, permits, etc.), of employers' behaviour towards young people and of labour market conditions (regulations) specific to each country.

Where it proves necessary or merely beneficial, such behaviour tends to become institutionalised. But its institutional form remains closely related to the society in which it is produced. For instance, secondary and higher education in France and Spain increasingly frequently include work placements in companies as part of vocational education courses, even though such placements are far from constituting a true dual system. It is well known that the societal framework of the German dual system has implications that go well beyond the mere education system. This makes it difficult to export to countries lacking these strong traditions and rules governing the labour market.

Clearly, the continued presence of important structural differences between countries is no obstacle to educational expansion; in fact, comparing and contrasting the different systems is of benefit to all parties.

Certain difficulties arise, however, in making a comparative analysis of the rise in levels of education and the cross-fertilisation between education systems.

In the first place, little is known about the effectiveness of the systems and their contributions to the economic and social development of each country. It is probable there have been some changes in this area over the last 25 years. There is no point in examining responses to economic and social change unless they can be related to each system as a coherent whole, and unless there is some way to assess their relative effectiveness.

Secondly, it is still difficult for one person to understand another's education system and the significance of the rise in levels of education since there are great differences and knowledge of that system as a whole is required. The best solution is probably not to aim at convergence or standardisation of systems but gradually to build up some common points of reference, particularly for similar levels of education.

4.3. Irreversibility of educational expansion

The results of EDEX (*cf.* Section 4.1) show that educational expansion, having gone on for a long time, recently speeded up dramatically, after which it would appear that there has been a stabilisation, in at least four of the five countries. Is the huge and continuous expansion in education, except in Germany, at a turning point in its history? It is still very difficult to answer this question, but it is obvious that it could have very significant consequences.

The "stabilisation" currently observed may perhaps amount, as has already been seen (Chauvel, 1998, Vignoles, Steedman, 2000), to a consolidation, following the rapid acceleration among the generations of the 1970s which will precede a renewed period of expansion. The conditions for an upturn have been described (Chapter 3): renewed expansion depends on the removal of a number of institutional barriers within education systems, and on young people's demand for education, which now appears more sensitive to economic fluctuations than in the past. This would mean that we do actually face a consolidation of the preceding period, which saw the 1970s generations advance dramatically: having made significant progress, the system would then maintain its level while it digested this advance.

But is a reverse trend conceivable? The power of the behavioural factors that led to the expansion of education, and the strong potential resistance to a decline, suggest that the expansion of education will stabilise (at least), will definitely last and cannot be reversed.

Educational expansion is a cumulative process which, in turn, profoundly influences family behaviour, decision-makers' strategies for the organisation of general and vocational education systems, and employers' attitudes towards qualifications. The upward shift in the minimum threshold of qualifications allowing access to employment and social status has a knock-on effect on the behaviour of the players, who regard it as a *fait accompli*. The fact that over half of each generation enter upper secondary or higher education has thus acquired a symbolic value for the generations that have contributed to it, and has come to form part of families' histories and fixed beliefs.

The role of qualifications as a social and economic signal also means that the development would be difficult to reverse. According to the "Investment in Education" model (Hartog, 2000, p. 9), only drastic action by the State (more obstacles and less funding) and a heavy fall in returns to investment, could lead to a return to the past, at least in the absence of severe shortages of labour.

At this point, mention should be made of a significant consideration: the results of EDEX over a long period show low sensitivity to economic conditions and cycles in the output of persons with qualifications. This output has been rising since the War without any obvious breaks, either during the period of strong growth ("the 30 glorious years") or during employment crises (the oil crises of 1974 et 1989). That said, observations about acceleration and stabilisation of educational expansion relate to a period characterised by abundance of labour rather than shortages. The low opportunity cost of post-compulsory education (Chapter 2) has encouraged further study. The period to come, however, will see the retirement of the large post-war generations. This may create quite significant job opportunities, to which young people will perhaps respond.

Subject to this reservation, four points suggest that educational expansion has a knock-on effect.

4.3.1. Educational strategies

The lengthening of the period spent in education has been supported by a wide consensus of all those involved in each European country. Everyone was in favour, although it was the State and families that were the main players. What has become of this consensus?

The State, the principal funder and organiser of educational expansion, does not seem inclined to reduce its commitment in any country despite the increasingly rapid pace of educational expansion in the recent past. In the United Kingdom, for example, "institutions at all levels are undergoing great political changes because of the Government's desire to raise the level of education of pupils and students. The aim is also to increase student participation at all levels, especially in the field of technology and at intermediate level" (Steedman, 2000). This is in fact the only country of the five which appears to have significant room to give levels of education another boost in the near future.

Even if qualifications were to become less cost-effective (which is not proven), young people would still find it helpful to obtain the highest possible level of qualifications in order to occupy the most favourable position in the market. Young people might, however, reason that they should take advantage of earlier opportunities to move into the labour market. Although this has actually occurred in some countries when there has been an upturn in the economy or in sectors where there is a shortage of skills (computing, for example), it is possible that these young people will seek to have their knowledge validated later in one way or another. The greater flexibility in educational demand found in some countries can be interpreted in this way. It is obvious nonetheless that the policy of diversifying higher education courses will crucially influence the decisions of young people who hesitate to commit themselves to long courses. This clearly seems easier to achieve in unified systems (Chapter 3, 3.1.2.1.2). In the case of the United Kingdom, the cost/benefit advantages need to be sufficiently attractive to pupils and students: firstly, the new courses introduced (the equivalent of *baccalauréat* + 2 years' apprenticeship) must lead to high-quality qualifications that are recognised by employers and the labour market, and secondly, the apportionment of costs between the State, employers and students must be resolved in a manner that is satisfactory for all. In general terms, however, it does not look as though we are moving towards clear changes in young people's behaviour.

As for employers, their skills requirements are complex. On the one hand, they have to cope with an economic environment that is increasingly subject to forces of change (internationalisation of markets, advances in technology, new models of company organisation) bringing about a greater need for skills and therefore higher qualifications. On the other hand, they also need to find staff for low-skilled jobs (cf. the banking sector, Chapter 2), the supply of whom is becoming smaller because of rising levels of education. There are tensions in this area, particularly in Germany where they have been brought into the open, but no doubt also in other countries. There are cases, for example, where companies have been unable to recruit and pay salaries at the intended level, and even of their shifting employment to somewhere where labour is less well educated and cheaper. This pressure exists, but ultimately appears to be minor in such a wide accountancy exercise as this.

Now that the study has ended, no reason has emerged with sufficient force to call into question the notion of the educational consensus. The common strategy continues to be educational expansion, even though changes may be made to the way in which this is organised (cf. the following concluding point). But the interests of the three main players will not change so much that educational expansion goes into reverse.

4.3.2. The symbolic role of education and qualifications

The irreversibility of a certain level of investment in education is also affected by its symbolic role. This reflects the many different functions of education in the social system, which go beyond the mere search for purely economic benefits. We need to move away from too reductionist an approach to the education system, and must not restrict its role to responding to the demands for skills expressed by production. The relative independence of educational demand from the needs expressed by employers strengthens this argument.

The value of qualifications is greater than the productive value accorded them by the market. This value, and the demand for academic education associated with it, is governed by the role of qualifications in overall social and occupational relationships. The growth in educational demand is not solely linked to employment prospects, anticipated productivity and the returns expected by each individual. Nearly 20 years on, we see that Carnoy (1982) was right: "even in an economy that shows itself incapable of absorbing larger numbers of graduates and obliges some of them to accept jobs previously occupied by less educated people, the factors causing educational expansion will continue to apply."

P. and A. D'Iribarne (1993, 1999, p. 28) also point to the significance of the symbolic role of education in France: "It is impossible to grasp the relationship between the education system and the production system in France if one overlooks the symbolic aspect of education. And this means above all appreciating the role played in France today by the contrast between what is more, and what is less "noble".... In contemporary French society, it is essentially a person's "academic *noblesse*", governed by their educational career, that will determine their personal *noblesse* for the rest of their life."

What is true of France applies equally, in various ways, to all the countries of "old Europe", each of which divides up and distributes its *"noblesses"* on the basis of education. However, as Shavit and Muller suggest (1998, pp. 19-20), in all countries, access to higher social positions is heavily influenced by the level of qualifications achieved.

The relationship between education and jobs, and the match between level of education and level of employment, are part of a broader issue that includes social signals. The education system produces both skills and a social hierarchy (in the case of the various *élites*, it does so through courses with very wide occupational goals – D'Iribarne A., D'Iribarne P., 1993).

4.3.3. Qualifications as a signal in the labour market

Given the lack of complete information about the labour market, the "signal" theory (Spence, 1973) and its more radical version, the "filter" theory (Arrow, 1973), have always been regarded as relevant factors in the interpretation and distribution of qualifications in the labour market (see Chapter 1). In this context, qualifications play a key role in signalling the skills that are asked for by employers (Chapter 2).

These theories, particularly the filter theory, also have their limitations: they do not necessarily imply optimum use of the knowledge associated with qualifications. Nor do they rule out the possibility of "wastage" in the matching of qualified persons with jobs. This "wastage" may be temporary, as companies may in fact be stockpiling adaptation abilities that they will need in order to evolve.

With the increase in the number of people with qualifications, there is also the danger that the value of qualifications as a signal will become weaker and decline (Gamel, 2000, pp. 71-74). But even if we make such an assumption adapting to the decline will not automatically lead to a slowing of the qualifications race among young people and their families. Rather, there will be "longer periods spent in study and a quest for higher or more selective qualifications" (although another form of behaviour, which is more difficult to measure, deliberately aims at a first job that is more modest in relation to the qualifications obtained). In other words, if qualifications provide a weaker signal, some people will go along with this trend and lower their expectations, while others will look for a stronger signal in order to keep them up.

The role of qualifications and hierarchies should not be forgotten in the creation of standard levels in the labour market. Although their effects differ according to the structure of the education system, "The nature of the links established between education and employment, and particularly their normative quality…have become a key reference point in the decisions made by those involved in the labour market" (Germe, Planas, 2000, p. 4). Qualifications gained at the end of long courses, for example, are judged by their capacity to ease access to a given level of job for which they are assumed to offer some preparation. This is neither a rule, nor a description of what actually happens, nor yet a mere response to the market, but a socially constructed point of reference that guides those managing the system, those in search of a qualification, and those who are recruiting or looking for a job.

These more or less explicit standards allow young people and their families to arrive at occupational expectations and make their educational decisions. They have a push and pull effect on these expectations, although the gap between symbolic perception and reality cannot be too wide. Given current perceptions, it is hard to imagine a reversal of the trend.

4.3.4. Education and qualifications as an investment

Another argument that should not be forgotten, which supports the irreversibility of educational expansion, is that though qualifications are less and less a sufficient condition for access to middle-level and higher positions in the jobs hierarchy, they are nonetheless increasingly a necessary condition (and a factor in protection against unemployment).

The positive results eventually found in respect of remuneration (Chapter 2) are in full agreement with the Human Capital Theory approach (Becker, 1964), which argues that individuals are inclined to sacrifice resources and satisfaction in the present in exchange for compensatory satisfaction and resources in the future. They regard education as an investment and reason that they can expect to profit from it. The future is thus a dynamic extension of the present: investment has not yet been affected by any potential weakening of the signal.

4.4. From consensus on initial education to consensus on skills?

Let us return to the question of the consensus on education: young people and their families, the State and employers have all had an interest in the expansion of education, although their reasons may have been different, and even contradictory. Educational expansion has thus occurred in a largely consensual context. It has taken the form, at least implicitly, of an expansion of initial education and an increased output of people with qualifications. In the preceding section we argued that the bases of this consensus were sufficiently firm to prevent a reversal of educational expansion. None of those involved – in the current state of the market – would benefit sufficiently to want to cause a breach in the consensus.

However, educational expansion seems to have come to a pause in most of the countries studied. The reasons for this phenomenon are not clear. The idea of a maximum threshold suggests itself, as the bulk of each generation is now educated beyond compulsory education. Solving the matter of young people with "no skills" or "no qualifications" has more to do with educational behaviour than with "level of education". Here also, while the situation in the different countries appears to be more and more similar, there are subtle distinctions. It is not the primary focus here, although this dimension must be borne in mind in speaking of the future of educational expansion and the educational consensus.

Skills requirements are still rising. Until now, they have largely been satisfied by a mixture of expanding initial education and/or the acquisition of work experience during active life. If the output of people with qualifications from initial education declined, it could no longer provide all the skills on its own that are needed throughout the market. Its role in the production of skills would cease to be paramount and would have to be compensated – assuming a constant need for qualifications – by certificated continuing education and training. The phenomenon would be even more marked if an increased need for skills were to make itself felt.

From the likely future behaviour of the three protagonists, it can be shown that a scenario in which continuing education and training take on more and more importance in the production of skills is plausible. The consensus would then move to the maintenance and expansion of skills in lieu of increased output of skills by initial education.

4.4.1. Outlook for the behaviour of the different players

What indicators are available to provide information on the future behaviour of the players towards education and training, and their new strategies to cope with the changed context created by the "stabilisation" of levels of education?

4.4.1.1. *Young people and their families*

As was reiterated in point 4.1.:

- In the recent past, the 1970s generations were the turning point in the development of educational expansion, and the 1980s generations have today reached another turning point. Of the young people in the five countries born in the 1980s, over 50% should eventually have an upper secondary (*baccalauréat* level) qualification. According to this criterion, they have attained the highest level of education ever found.
- Furthermore, except in the UK where there still seems to be some room for manoeuvre, it would appear that the rise in levels of education has reached an upper limit and that the proportion of upper secondary qualifications will, in the near future, only vary slightly. A return to below 50% of a generation at that level appears equally unlikely.
- These generations at the pinnacle of educational expansion are, except in Germany, less numerous than preceding generations (France, UK) or even falling appreciably in size (Italy, Spain). Assuming an equal demand for labour, they should find it easier to get a first job of higher quality. These fortunate employment circumstances may even improve given the opportunities created by the retirement of the numerically large post-war generations and/or a continuing economic upturn. But a favourable employment situation may *a priori* have a negative effect on continued study (Section 3.1.2.2.1.): on the one hand, it may increase the opportunity cost of continuing to study and reduce the tendency to seek shelter within the education system, but on the other, it may increase the returns to study and therefore encourage take-up of long courses.

One hypothesis put forward to accommodate these contradictory effects (Chapter 3) is that the behaviour of the new generations will be more variable and flexible in terms of educational demand, tracking economic conditions more closely. This is a powerful hypothesis which, from a study of the situation in these countries, appears to be holding up. The risk inherent in leaving education and entering the labour market early, which may be justified by favourable economic conditions, would be compensated by the possibility of returning to study, including certificated education and training, during active life.

This would be made easier by the high level of education achieved by the young people in question: it is established that the more initial education an individual has acquired, the more he or she will demand continuing vocational education and the more he or she will be able to make effective use of it. What is true of the new generations will also apply to the whole of the active population, which will, by a demographic process, become more and more highly qualified.

This "new" behaviour could lead, if it were confirmed, to new links between initial and continuing education, between continuing study and return to study. If such behaviour spread, tensions would doubtless emerge owing to the rigidity and inflexibility of the education system. More broadly, the rise in the population's levels of initial education would threaten the balance between the roles of initial and continuing education in the building of skills.

4.4.1.2. *Employers*

According to the information collected on employers' possible attitudes towards qualifications in the near future (Chapter 3):

- Employers' behaviour will depend essentially on two factors: first, the "forces driving economic change"; second, changes in the supply of persons with qualifications leaving the education system.
- The forces driving economic change (Chapter 2) are unlikely in the near future to cease or let up the pressure they place on companies. In consequence, employers' demand for skills should continue to rise.
- Employers will need to recruit both more skills and skills suited to changing and largely unforeseeable needs.

Employers express their needs in terms of skills. These increased needs have in the recent past often been met by young persons with qualifications from initial education. The question is to what extent the output of persons with qualifications by the education system will continue to supply the skills needed by employers if the latter continue to place the emphasis on recruiting young graduates.

A person's set of skills can be acquired in different places and by different means, in a wide range of combinations. The sources of skills are school and higher education, working and social life, and continuing education and training. What will be the most relevant (effective and efficient) combination for the acquisition of the skills needed by employers in the future?

Given national demographic trends and the likely hypothesis of stabilisation of educational expansion, it is inconceivable that the huge output of young people with qualifications entering the labour market in the 1990s will continue in the second half of this decade. It is difficult to imagine that the relatively abundant supply of young qualified labour, of which employers have been able to take advantage over the last ten years, will continue.

On the other hand, the decline in the output of qualified persons entering the labour market will not prevent a continued rise in the level of qualifications of the active population as a whole: even though it will be smaller, the flow of qualified entrants will more than replace those who retire.

The labour supply will therefore move in two directions: a) a probable decline in the flow of entrants to the labour market with qualifications, and b) a sustained rise in the level of qualifications of the labour force.

Countries will thus have at their disposal active populations that have been educated for longer and longer, have more qualifications and, above all, are more easily to educate further through continuing education and training. While tensions in the labour market will arise in certain occupations as a result of the slower rise in the level of education of the population of working age, it may be assumed that companies will more readily encourage their staff to return to study through continuing education and training.

4.4.1.3. *The State*

Until now, governments have not slackened in their commitment to education despite some evidence here and there of educational Malthusianism. Not the least of the challenges that they will nevertheless face in the future is how to implement lifelong education in practice. From the statements made by governments, European supranational bodies and educational institutions, especially in higher education, it is evident that this issue may result in a reorganisation of education and training systems. But to achieve this we have is little budgetary room for manoeuvre.

Educational institutions as a whole, despite appreciable differences between countries, are more sensitive today to the demands of their clients. They are in fact looking for new clients. In order to maintain, and if possible to widen their base, they are prepared to be more flexible in both course provision and routes of entry. These changes, already the norm in continuing education, are also beginning to affect initial education. They are a reaction to the new needs and behaviours detected among employers and young people, and are being developed as part of policies aimed at expanding educational provision without appreciably increasing budgets. Governments believe that the initial education system must become more flexible and open to new sections of the population without any substantial change in the overall costs of education.

4.4.2. Towards a greater role for continuing education in the production of skills

This look at some aspects of the likely future behaviour of the various players engaged in education suggests that the consensus on educational expansion will continue, but on a new footing that is modified to take account of current circumstances and the behaviour and interests of all those involved.

Assuming that the role of qualifications remains constant, satisfying employers' needs will mean a shift in skills provision to sources other than certificated initial education, even though this will continue to play a key part in the renewal of the active population.

From the quantitative point of view we have seen that the supply of persons with qualifications is likely to be more limited than in the past unless there are significant social and institutional changes or a shift in young people's behaviour. These changes are not improbable, but they presuppose "...profound changes in education systems so that these make education available at more flexible times. This is not inconceivable. Here and there, such options are making their appearance. Changes in behaviour in choice of subject and pattern of study are actually to be seen in some countries. Different routes of entry to higher education are developing in certain countries" (Frey, Germe, Ghignoni, 2001).

At all events, this new behaviour by young people, adults and employers should lead them to demand far more continuing education. This may be encouraged by the high level of education among recently recruited staff, which may reduce the costs of training and adaptation. Employers will need to manage the tensions created by the intra-company competition between the generations: "...if the pressure of competition (in the banking sector) increases and methods of regulating internal markets are not modified (recognition of skills and training effort, and career progression), these characteristics are likely to create serious tensions" (Bruniaux, 2001, p. 26).

These possible changes therefore contain the seeds of a skills production scenario in which certificated courses provided by continuing or lifelong education complements and partly replaces the certificated courses provided by initial education systems. This would take the form of:

(a) greater flexibility in young people's demand for education, linked particularly to the immediate economic situation,

(b) the possibility that some form of work might become more common during initial education (especially in systems giving greater weight to academic education), allowing more young people, particularly of student age, to study while working,

(c) new opportunities for young people to decide between continued initial education and return to study after a first period spent working, which might call into question the "30 years of age" frontier (Section 3.1.).

(d) an increasingly important role for continuing education and training (some of it leading to certification) among the employed, leading to a wider distribution of formal qualifications and to a closer adaptation of the skills acquired during initial education to employers' needs.

Once again, such a scenario is very hypothetical. "It would probably require very profound long-term changes in employment, the labour market and education and training systems" (Germe, 2001).

This scenario would nonetheless suit all those involved for the following reasons:

Young people would be able to adjust their new pattern of educational "consumption", using continuing education to maintain and even increase their chances of being educated and gaining higher education qualifications which, it should be remembered, play a symbolic role and act as significant signals or standards in the labour market. They are also a key factor in opportunities for occupational mobility, and hence a crucial element in career development.

By means of this new regime, reflecting demographic and institutional changes, employers might still have access to a better-educated, more highly skilled and more adaptable work force. They would continue to use education as a means of supplying the reservoir of skills they needed in order to respond to future changes.

Finally, governments would be able to deal with the new challenges of meeting the needs of increasingly well educated societies; and education systems and educational institutions would find the means both to adapt to young people's new behaviour and to widen their potential public, thereby consolidating their position in the economy and in society.

4.5. The identity of education systems and production of skills for the economy

The question addressed in this point is the interaction between the supply of and demand for qualifications. For this we need to look at a number of aspects: the timescale of the production and consumption of skills, the response to the needs of the economy versus the needs of employers, the differences between these two sorts of needs and their links with the needs of individuals, and, finally, against this background, the role of educational institutions.

The supply of persons with qualifications is relatively independent of demand. This is explained by the social diversity of the functions of education, which cannot be reduced solely to the economic domain. Even in this domain, the difference in the timescale between the supply of qualifications and the demand for skills, and the differences between employers' short-term needs and the long-term needs of the economy, not to mention those of individuals, may help to explain the relative independence of the supply.

Much attention has been given to the key part played historically in the evolution of the output of qualifications by the protagonists involved – the State, young people and their families. It has also been shown that the behaviour of these players regarding the rise in education has been affected by changes in the demand for labour.

The results of EDEX also point to an obvious interaction between educational expansion and economic developments, even though long-term educational growth does not appear to be very sensitive to variations in economic conditions: "...even though the study makes no pretence of being exhaustive, the employers interviewed usually perceived the issue of educational expansion and the greater availability of people with qualifications in the market – at least this is a strong trend – as a response to the increasingly urgent needs for retraining labour and anticipating those retraining needs. Technological advances bring about changes in work that often tend towards greater complexity. In recent years, moreover, they have also speeded up extraordinarily because of the growth in computerised information and communications (to mention but one factor). Since the vast majority of individuals acquires qualifications during initial education, it is young people who are the "carriers" of educational expansion. There is an assumption that the higher the qualifications, the greater the individual's adaptability. Employers see qualifications as a guarantee of greater and faster – and ultimately less costly – adaptability. And that may a major factor in the decision to recruit young people" (Béduwé, 2000).

Although employers may not play a leading role in educational expansion, they have certainly supported it through their recruitment behaviour in France, Spain and Italy; as also in Germany, where they show a preference for offering apprenticeships to young people who have completed upper secondary education. It is in any case unthinkable that such a widespread and long-term phenomenon should have been contrary to the needs of employers. Employers express their opinions on the matter by default: they accept the products of the education system when they recruit people with qualifications. The initiative for expansion would thus rest with the State and families.

On the other hand, if we focus on the production of skills rather than the qualifications produced by education systems, it is apparent that skills – additional and specialist skills – are produced jointly by both systems, i.e. by educational institutions and by employers.

4.5.1. Demand follows supply: Results of a macro-statistical approach based on skills

The work done in EDEX was based on a macro-statistical finding from earlier studies (Mallet *et al.*, 1997): **demand for qualifications follows supply.** These studies were explored and built on in EDEX (Chapter 2).

The studies were conducted on the basis that the skills needed to do a job are made up of a variety of components acquired through initial education, experience, continuing education and social learning. We attempted to reflect this essential fact statistically in our work, although we had to work around the limitations of our statistical systems: thus, we added age as a proxy for work experience to level of qualifications in order to evaluate individual skills.

These three results were common to all the countries taking part in the study:

- Educational expansion has spread in all categories of employment, as the result of a strong supply-side effect that is relatively independent of the parallel growth in the numbers of people employed in various categories.
- If requirements for access to each occupation are taken into account, the rise in levels of education within employment has overall been reflected wages and salaries.
- The likelihood of reaching management positions, all other things being equal, (qualifications, age, economic situation) has declined among generations born after 1940.

The rise in levels of education within employment has been reflected in the pay scale according to complex and changing patterns that combine the supply-side effect and employers' requirements (Haas, Tahar, 2001). People with more qualifications are being recruited (by default, given the changes in the supply), but this is beneficial as the additional human capital is better rewarded overall within a given occupation. It also leads to changes in the system of occupational mobility, access to management positions being merely one aspect.

The questions that arise relate to employers' behaviour in response to the greater availability of people with qualifications in the labour supply; the reasons they give for recruiting qualified people; and the use they make of them.

4.5.2. The timescale of skills production

One basic finding of EDEX is that the skills which employers were able to use with some success to meet the commercial challenges of the second half of the 1990s (which resulted from technological change and the globalisation of trade), were largely produced through educational expansion, well before the demand for them became visible. In other words, the demand of the 1990s was satisfied thanks to educational decisions taken by governments and families in the 1970s and 1980s. **The nature of the supply made it possible to satisfy the demand that actually arose.**

The answer to the question of what qualifications are needed varies according to the timescale in which it is asked; similarly, every mismatch arising between the supply of skills and the demand for skills is essentially a problem of timing. The changes occurring as a result of globalisation mean that decisions about the production, circulation and accumulation of capital are governed by the short term, while decisions about human and social reproduction m0ust take into account the long and very long term (Vinokur, 1998).

In the relationship between the supply of skills and the demand for skills, time plays widely varying roles. There are the time taken to acquire skills, the length of time for which they are used, and the timescale for forward planning, all of which have financial consequences. In order to clarify these roles, it would appear helpful to distinguish between the players involved (individuals, institutions and employers), thereby demonstrating the incompatibility of the timescales in which they each make their financial calculations.

4.5.2.1. *The individual timescale in the acquisition of qualifications*

Individuals largely acquire qualifications during initial education.

People logically have long-term strategies for initial education, being aware that investment in this education will provide the basis for their social and occupational positions (D'Iribarne A., D'Iribarne P., 1993) and hence for their ability to enter continuing education. The minimum timescale for these decisions about initial education is necessarily the same as the anticipated length of active life.

Individuals are also aware of the irreversible nature of their initial education for at least two reasons. First, such a long period of full-time education cannot be repeated later in life. Secondly, people are only young once. Youth, the age of initial education, is a period of life when individuals are more malleable, both psychologically and physically, and this again reinforces the irreversible nature of initial education (Planas, Plassard, 2000).

4.5.2.2. *The time taken to produce and renew the overall supply of skills*

Two major processes may influence the renewal of the overall supply of skills: a) demographic renewal through the flow of leavers from initial education, and b) continuing education.

The overall supply of skills is therefore affected by the long-term inertia of demography and of the initial education acquired by each of the generations making up the active population of each country (see Chapters 1 and 2). In the short term, it has the adjustment mechanism of continuing education, in the broad sense, i.e., education comprising work experience, continuing education and training courses and any other activity from which skills can be learnt during active life.

The time taken by education systems to produce persons with qualifications is expanding, both because the period spent in compulsory education is becoming longer, and because post-compulsory education is becoming increasingly common (see Chapter 2). This reflects individuals' strategic decisions.

The time taken to produce skills must distinguish between the long periods spent in basic education on the one hand – which are *structural* – and the history of experience incorporated into human capital and the short periods required to produce specialist abilities on the other – which are *situation-specific.*

4.5.2.3. *The timescale for demand: short-term tactics and long-term strategy*

As a tactical approach (see Chapter 3), employers quite independently make the best use of the opportunities offered by the environment in which they find themselves in order to respond to production needs that are increasingly dominated by the short term.

Nowadays, when a company decides on its initial requirements, the skills needed are laid down in ignorance of the skills that will be required in the future. It is reasonable that companies should try to anticipate, either by recruiting people whose skills may not all be used until later, or by recruiting workers capable of acquiring cheaply the skills that may prove to be necessary later. In both cases, it would be possible to speak of a "reservoir of skills" associated with level of qualifications and possibly with specific subject areas (Haas, 2000).

As for the organisation and design of jobs, a lack of full information suggests that "constructivist" theories of organisation apply, i.e., that problems are resolved as they appear. Companies must therefore have the requisite skills (skills necessarily possessed by individuals or a group of individuals) to respond to these issues. The adaptation cost analysis proposed by Stanckiewicz (2000) addresses this issue.

The lack of complete information also relates to outlets and hence to short-term flexibility of production. Being flexible has consequences for the organisation, and therefore for jobs and the skills required (Vincens, 2000 p. 3).

But companies are not a homogeneous whole, and the time constraints on a company will depend on two groups of variables (Planas *et al.*, 2001):

(a) *On its strategic timescale* (Galtier, 1996). If a company plans to continue its current activities for a long time, its timescale will be long and its main problem will be the uncertainties that are inseparable from any project. If, on the other hand, a company has a short timescale, this will mean that it intends to change the way in which it uses its capital in the relatively near future. It is therefore highly likely that it will also change its demand for labour and hence its skills requirements in order to match the use made of its capital.

(b) *On staff relations within the company*. By this term we mean the whole web of relationships which together form the human resources management policy governing the potential existence of an internal market or a company training policy, etc.

The combination of these two groups of variables governs the policy of the company. It is obvious that a company with a short timescale will seek to obtain the skills needed from the market without worrying about their future use. A company with a long timescale, however, may try to make sure of the skills needed in both the short and the long term. It will tend to develop a training policy and to recruit its staff with an eye to individuals' potential. However, even with a long timescale, staff relations may be such that the company has no long-term policy and is content to look to the market for what it requires at any given time. Here, the situation on the labour market will obviously be of huge importance.

4.5.3. The needs of employers and the needs of the economy

The needs of the economy are not the same as the aggregate needs of employers at any given time. This difference rests on two key factors: the long-term needs of the economy cannot be discerned from the needs of companies; on the other, individuals' education and training behaviour does not exactly match the needs of the companies employing them.

Because of the unemployment associated with finding a first job or losing a job, part of the active population is not in employment. Moreover, if an employee's education is to coincide with his or her company's training plan, their aims would need to be remarkably similar.

There is no guarantee that the needs of employers (usually short-term) and those of individuals (usually medium or long-term) will coincide. In managing their careers, individuals take decisions which do not fit with the skills requirements of the companies employing them, and are sometimes even contradictory. Nonetheless, the sum of these individual behaviours, as has just been said, is a crucial factor in economic development.

Furthermore, in a world of growing complexity and uncertainty, a "supercomplex" (45) world as Barnett (2000) might say, the want of complete information about the needs of employers increases with the length of the timescale.

It is thus shown that there is no equivalency between the needs of the economy and the needs of employers. In other words, the needs of the economy cannot be likened to the sum of the needs of employers that obtain in the economy at any given time. The needs of the economy do not, of course, run counter to those of employers, but the results of EDEX show that there are asymmetries in the information needed to manage production of the skills needed by both. This raises the major policy issue: What should be the orientation of the initial education system? and what is its place in the development of lifelong learning and the systems that will deliver it?

The economy and education systems will evolve in line with the major trends that companies also have to cope with. Both the forces driving the economy, and educational expansion, have provided the framework within which companies have acted as consumers of qualifications and as producers and consumers of skills. In the field of education it is obvious that the production of qualifications has proved beneficial for the economy over the long term, despite the differences in timescale between the need (and therefore the demand) for skills expressed by employers, and the production by the education system of generations of people with qualifications.

Can all of this be summed up in the simple phrase "the more education, the better", whereby the nature and purpose of the education ultimately matter little? The answer is a clear No.

The independence of each system reflects the complexity of European societies and economies: greater independence reflects increased complexity. The consequence for education systems, especially universities, is that they will be forced to find the time and the means to define medium-term development objectives jointly with the supervisory bodies funding them

---

(45) The term supercomplexity, as used by R. Barnett, is employed here to indicate an extraordinary increase in the complexity of the frame of reference in European societies and, in consequence, in the unpredictability of its evolution.

– and then to implement and attain these objectives. The time that they spend on this, which might be seen as a search by education systems for their own identities (in relation to continuing education, the economy and so on), and on reporting on the objectives attained, will justify their independence in return. This leads on to the very fashionable quest for enhanced quality in education systems and for evaluation of that quality.

According to Cave *et al.* (1997), for example, in an analysis of the situation in the United Kingdom, evaluation of higher education institutions based on "objective" indicators and "external" evaluators has led to "adaptive" rather than innovative behaviour. It would appear that greater innovation is achieved through models based on joint definition of objectives, and through independence for institutions in implementing these.

4.5.4. Strengthening the identities of education systems in response to the needs of the economy

It may be deduced from the preceding points that the market, which is subject to growing pressure leading to greater uncertainty and complexity, cannot be expected to provide education systems with the long-term information that they need to guide their development.

According to Barnett (2000, p. 257), a supercomplex world is one in which facts, arguments, data, tasks, etc., do not develop a priori in fixed patterns. Even the patterns that allow us to make sense of the world, our place in the world and our frame of action, are in doubt. In a world of this type, Barnett argues, it is necessary to preserve the "identity" of education systems (he is referring to higher education) in the light of, and in balance with, their "performativity" dominated by the "know-how" that is governed by the needs of the market.

To put it simply, education systems must, in order to respond to the needs of the market in a supercomplex world, preserve their function of initial education in the long term and support the growth of lifelong education while avoiding the pressures of a market governed by the short term, failing which they may quickly become ineffective and inefficient.

"This presents a challenge to governments and the European Commission: modernising the education system without subjecting it to the strict constraints of the market while arguing for education for the long term (rather than adaptive learning), maintaining a vocational approach (to ensure that employees learn lasting skills), monitoring the subject-matter taught (to enhance cognitive ability and critical distance at the same time as vocational behaviour).... What the recent past has shown is the independence of education systems relative to employers' needs. The former change more slowly than the latter does, and are less subject to crises of market adjustment. Education often seems to give an unchanging answer (adjusted or not) to a wide range of social and economic problems (social life, production, economic development). It serves as a palliative for growing uncertainties and complexities in a world where traditions are in crisis and all sorts of activities continually have to be (excessively?) reformulated" (Louart, 2001).

In order to fulfil their economic and social functions in the long term, education systems need to develop their own identities, taking into account the needs of European societies and economies. As Barnett (2000, p. 265) says in relation to university curricula, "...a policy perspective has opened up, too, in our discussion. Curricula, I have suggested, are in a state of transition but they are not necessarily moving in any clear or even deliberate direction. Such dominant directions of change as there are – towards performative models – are inappropriate to conditions of supercomplexity. Accordingly, a new responsibility is falling on universities to demonstrate that the education that they offer is likely to be adequate to the challenges of a supercomplex world. It is a responsibility – and an educational project – that most universities and most curricula are failing to meet."

Defining the place of education systems in society, and creating their identity as chiefly responsible for initial education, means being able to handle a long-term balancing act between, firstly, managing the link between its economic function and its other functions – which must not be forgotten – and, secondly, within its economic function, managing the needs and interests of the economy, employers and individuals, particularly the long-term needs. And this all has to be done against a background of "supercomplexity" and hence of uncertain information.

It is not the purpose of this report to prescribe how educational institutions should set about achieving this balance. From our results it is evident that two diametrically opposite dangers have to be avoided: on the one hand, being dependent, as provider, on clients (companies) governed by the temporary economic needs of the market, and on the other, managing education on the basis of internal and/or academic inertia in the "donnish" British tradition (Halsey, 1982). The latter course runs the risk of ignoring the social and economic needs to which institutions must respond.

What information is relevant? What points of reference do education systems need to create and update their identities? It is not within the province of this research to provide the answers. It is well known that a wide range of information is required, taking into account, among other things, the needs of the economy, employers and individuals, all of which are changing.

CHAPTER 5

Bibliography

5.1. Research reports produced within the EDEX framework

5.1.1. **National reports**

Béduwé C., Fourcade B., (1999), "Générations et hausse d'éducation en France", *Final Report, Work Package* 1, LIRHE, Toulouse, July.

Béduwé C., Dauty F., Fourcade B., Ourtau M. (2001), "Eléments pour une prospective des relations formation emploi en France", *Final Report, Work Package* 4, LIRHE, December.

Bosch, F., Bergeron E., Lopez J., (2000), "Employment, Skills and Education in U.S. Banking", *EDEX National Report, Work Package* 3, Guadanalitica S.A, Madrid, December.

Böttcher S., (2000a) "Allemagne : Evolutions récentes de la relation formation-emploi en industrie", *EDEX National Report*, ZSH, Halle, December.

Böttcher S., (2000b), "Szenarien der zukünftigen Entwicklung von Bildungsbeteiligung und Qualifikationsbedarf- und Nachfrageentwicklung im Beschäftigungssystem bis 2010". *EDEX Work Package* 4.1. German Contribution, Working Paper, Halle.

Böttcher S., Haas J., (2000), "Changes in employers' recruitment practices in West Germany since the seventies. Part 2, Special report on mechanical engineers and the banking sector", *EDEX National Report, Work Package* 3, Zentrum für Sozialforschung, Halle.

Bruniaux C., (2000), "La diffusion des diplômés dans les entreprises britanniques: 'overeducation', 'skills gaps' ou 'mismatches'?", *EDEX National Report, Work Package* 3, Centre for Economic Performance, London School of Economics and Political Science, May.

Buechtemann C., Kohler M., (1999), "Education expansion & labor markets", *First CRIS International Interim Report*, Berlin, April

Buechtemann C., Kohler M., (1999), "Project education expansion & labor markets. Country study United States of America". *Working Paper*, C*R*I*S International - Berlin and Santa Barbara (Cal.), September.

Cahuzac E., (1998), "Création du site WEB EDEX", Lirhe, Toulouse

Chevalier, A., (2000), "Graduate overeducation in the UK", Centre for the Economics of Education, DP05.

Croce J., Frey L., Livraghi R., Cavicchia L., De Caterina A., Sbaraglia F., (2000), "Les comportements observés dans le système productif italien face à l'accroissement d'éducation", *EDEX National Report, Work Package* 3, CERES, Rome.

Dauty F., Aubry C., Ourtau M., (2001), "Evolution des modes de gestion, comportement des entreprises et hausse des niveaux d'éducation en France",

BEST COPY AVAILABLE

EDEX National Report, Work Package 3, LIHRE, Université de sciences sociales de Toulouse.

Espinasse J. M., Fourcade, B., (2000), "Education, efficacité et arbitrage intertemporel. Une analyse générationnelle", communication aux XXèmes journées de l'AES, Toulouse, September.

Frey L., Ghignoni E., (2001), "Prospective de la demande, synthèse pour WP4", EDEX *Synthesis Report, Work Package* 4, CERES, Rome, October.

Frey L., Ghignoni E., Cavicchia L., (1999), "Rapport final WP1 pour l'Italie", CERES, Rome, June.

Frey, L., Ghignoni, E., Pappadà, G., (2000), "Prolongement de WP1 du point de vue prospectif. Le cas Italien", *EDEX Working Paper, Work Package* 4, CERES, Rome, November.

Ghignoni E (2000), "Extension des travaux macro sur les modes de diffusion des diplômes entre professions et secteurs en Italie". *Working Paper,* Rome, February.

Ghignoni E. (2000), "Frontières de compétence et fonction de gain en Italie: 1993-1998", *Working Paper,* CERES, Rome, July.

Ghignoni E., (2001), "La hausse d'éducation en Italie", *EDEX Working Paper, Work Package* 4, CERES, Rome, May.

Haas J., (1999), "Politics, Educational System and Educational Flows in Germany", *Working Paper,* Zentrum für Sozialforschung, Halle, July.

Haas, J., (1999), "Processes of Competence Allocation in the West German Employment System: 1985-1995". *Working Paper,* Halle, August.

Haas J., (2000), "Changes in employers' recruitment practices in West Germany since the seventies. Part 1: A survey of pertinent literature", *EDEX National Report, Working Package* 3, Zentrum für Sozialforschung, Halle, January.

Haas J., (2001a), "La tradition sous un nouveau jour – la mise en place et le développement des études en mode dual en Allemagne", *Working Paper,* Lirhe, Toulouse, April.

Haas J., (2001b), "Pronostiquer la contingence. Contribution allemande sur l'avenir de l'expansion de l'éducation", *EDEX Report, Work Package 4,* Lirhe, Toulouse.

Haas J., (2001c) : "L'accès aux positions supérieures et carrières des générations: changement des mobilités professionnelles en Allemagne de l'Ouest", *EDEX Report, Work Package* 2.3, Toulouse.

Haas J., Lutz B., (1999), "German contribution to WP1", EDEX *National Report, Work Package* 1, Zentrum für Sozialforschung, Halle, October.

Lutz B., (2000a), "Notes pour le rapport de synthèse WP 3 – comparaison internationale", *Working Paper,* Zentrum für Sozialforschung, Halle, 13 October.

Lutz B., (2000b), "WP 4.2 Evolution du système éducatif en Allemagne", *Working Paper,* Zentrum für Sozialforschung, Halle.

Masjuan M., Vivas J., Sala G., (2000), "Les réponses des employeurs espagnols face à l'accroissement d'éducation", *EDEX National Report, Work Package* 3, GRET-ICE, Barcelona.

Masjuan J. M., Sala G., Vivas J., (1999a), "EDEX - Tache 2.2. Extension des travaux macro sur les modes de diffusion des diplômes. Espagne". *Working Paper,* Barcelona, July.

Masjuan J.M., Salla G., Vivas J., (1999b), "Analyse des structures éducatives en Espagne", EDEX *Final Report*, GRET, Barcelona, June.

Planas J., Sala G., Vivas J., (2001) "Le futur de l'expansion éducative en Espagne. Analyse prospective du système éducatif.", EDEX *Report, Work Package* 4, GRET-ICE, Universitat Autonoma de Barcelona, May.

Steedman H., (2000) "Prospective pour l'évolution de l'éducation et de la formation en Grande-Bretagne 2000", *EDEX Report, Work Package* 4, CEP/LSE, London, December.

Steedman H., (2001), "Complément pour WP4", *EDEX Working Paper*, CEP/LSE, Londres, July.

Steedman H., Vignoles A., (1999), "Schooling and the Supply of Qualifications in the UK 1930-1997", *EDEX Final Report, Work Package 1,* LSE, London, 25 June.

Tahar G. (2000), "Frontière de compétence et fonction de gain", *Note*. LIRHE 334 (00-34), December.

Vignoles A., Walker J., (2000), "The impact of changes in the supply of qualifications on wages: United Kingdom", *Working Paper,* LSE, London, June.

Vincens J., (2000), "L'évolution de la demande d'éducation", *Note,* LIRHE 329 (00-29), December.

5.1.2. **International reports**

Bruniaux C., (2001), "Evolution de l'emploi et des qualifications dans le secteur bancaire en Espagne, Italie, Royaume-Uni, Allemagne, France", *Synthesis report prepared from national reports*, EDEX *Work Package* 3, *for the Zentrum für Sozialforschung*, University of Halle, May.

Frey L., Germe J.F., Ghignoni E., (2001), "Rapport de synthèse sur la prospective dans EDEX", *Synthesis report for* EDEX, *Work Package* 4, CERES, Rome, October.

Haas J., Tahar G., (2001), "Expansion de l'éducation et rémunération", *Synthesis report for* EDEX, *Work Package* 2, Toulouse, June.

Louart P., (2001), "Hausse d'éducation, demande productive et comportement des employeurs", *International synthesis report for* EDEX, *Work Package* 3, LIRHE, Toulouse, April.

Steedman H., Vincens J., (2000), "Dynamique des systèmes éducatifs et qualification des générations. Comparaison internationale", *Synthesis of national reports, stage* 1, *for CEP*, London, Toulouse, May.

5.2. General bibliography

Arrow K.J., (1973), "Higher Education as a filter", *Journal of Public Economics,* 2.

Baker, T.S., Peterson, A.W.A, (eds.), (1987), "The Cambridge Multisectoral Dynamic Model of the British Economy", Cambridge University Press.

Barnett R., (2000) "Supercomplexity and the curriculum". *Studies in Higher Education,* 25 (3).

Becker G.S., (1964), "*Human Capital",* Columbia University Press, New York.

Béduwé C., Espinasse J.M., (1995a), "Productions de diplômes et diffusion des compétences", *Cahiers du LIRHE,* 1, Toulouse.

Béduwé C., Espinasse J.M., (1995b), "France: Politique éducative, amélioration des compétences et absorption des diplômés par l'économie", *Sociologie du Travail,* 4, pp. 527-556.

Béduwé C., Espinasse J.M., (1996), "Concurrences entre générations et accès à l'emploi des jeunes", *Formation-Emploi,* 55, pp. 19-41.

Béduwé C., Espinasse J.M., (1997), "Certificates, skills, and job markets in Europe: a summary report of a comparative study conducted in Germany, Spain, France, Italy, The Netherlands, United Kingdom", Third ESF Workshop of the Network on Transitions in Youth, La Ciotat, in P. Werquin, P. Breen, J. Planas E. (eds.), *Documents Séminaires* n° 120, CEREQ, pp. 205-238.

Béduwé C., Giret J.F., (1999), "Développement de la formation et marché du travail en Europe", *note Lirhe* 286 *(*99-3*),* January; also in Spanish "Desarrollo de la formacion y mercados de trabajo en Europa", *Revista de Educacion, Numéro spécial Economia de la educación",* January-April 1999.

Blanes, A., Gil, F., Pérez, J., (1996), (Centre d'Estudis Demogràfics), "*Població i activitat a Espanya: evolució i perspectives",* la Caixa, Barcelona,.

Boockmann, B.; Steiner, V. (2000), "Cohort Effects and the Returns to Education in West Germany". Discussion paper, Centre for European Economic Research (ZEW), Mannheim.

Bosch F., (2001), "Empleo, habilidades y educación en la banca de Estados Unidos", Guadanalítica S.A. Ernesto Bergeron, Cohen Brown Management Group Inc. Jorge López – Universidad Carlos III, Madrid.

Buechtemann C., Verdier E., (1998), "Education and Training Regimes Macro-Institutional Evidence", *Revue d'économie politique,* 108, pp. 292-320.

Buechtemann C., Soloff D., (1996), "Human Capital, Capabilities, and Economic Performance", *C*R*I*S Working paper E*96-05, Santa Barbara, California, 45 p.

Caixa de Catalunya O., Coord J., (2000), "Informe trimestral sobre el consum privat a Espanya", Caixa de Catalunya, March.

Carabaña, J., Arango, J., (1983), "La demanda de educación universitaria en España", *Revista Española de Investigaciones Sociológicas,* 24, pp. 47-88.

Carnoy, M. (1982). "Education, economy and the state". In *Cultural and Economic Reproduction in Education.* M.W. Apple, ed., pp. 103-106. London: Routledge and Kegan Paul.

Cave M., Hanney S., Henkel M., Kogan, M., (1997), "*The Use of Performance Indicators in Higher Education: The Challenge of the Quality Movement*". Third Edition. Higher Education Policy Series 34.Taylor & Francis, Bristol.

Cedefop, Eurostat, European Commission (2001). "*The transition from education to working life. Key Data on Vocational Training in the European Union*". Luxembourg: Cedefop Reference series.

Céréq. (2000), "De la secrétaire à l'assistante. Un processus qui requiert un accompagnement", *Bref Cereq n° 160*, January.

CERES, (2000), (Centro Ricerche Economiche e Sociali), "The anticipation of labour demand, occupational profile and training needs at local level: approaches, methods and tools", European Commission, Leonardo Da Vinci Programme, Rome, 2000.

Chauvel L., (1998), "Le destin des générations. Structure sociale et cohortes en France au XXème siècle", *Le lien social*, PUF, Paris.

Commissariat Général du Plan, *"Qualifications et fonctions: une lecture transversale des contrats d'études prospectives industriels"*, La Documentation française, January.

de Miguel, C., Agüero, I., (1986), "Evolución demográfica y oferta de fuerza de trabajo", in Olano, A. (ed.): *Tendencias demográficas y planificación económica*, Ministerio de Economía y Hacienda, Madrid, pp. 277-334.

Dearden, L., Reed H., Van Reenen, J., (2000), "Who gains when workers train? Training and corporate productivity of a panel of British industries", Institute for Fiscal Studies, WP 00/04.

D'Iribarne A., D'Iribarne P., (1989), "La compétitivité: défi social, enjeux éducatifs", CNRS.

D'Iribarne A., D'Iribarne P., (1999), "Le système éducatif comme expression d'une autre politique", *Revue européenne de formation profesionnelle* 17, pp. 27-39.

DPD 1997, (Direction de la Programmation et du Développement), *"Education & Formation"*, 51, September.

DPD 1997, (Direction de la Programmation et du Développement), *"Education & Formation"*, 81, March.

DPD 2000, (Direction de la Programmation et du Développement), *"Education & Formation"*, 55, January-March.

Duru-Bellat M., Kieffer A., (1999), "La démocratisation de l'enseignement 'revisitée'. Une mise en perspective historique et internationale des inégalités des chances scolaires en France". *Cahiers de l'IREDU*, 60, Dijon, May.

Economie et Prévisions, (1998), special issue on French macro-economic models (Hermes).

Espina, A., de Miguel, C., (1992), "La disponibilidad de recursos humanos en España: una proyección de población activa con horizonte en el Siglo XXI", in Espina, A.: *Recursos humanos y política industrial*, Fundesco, Madrid.

Espinasse J.M., Fourcade B., (2001), "Education: équité, efficacité et arbitrage intertemporel. Une analyse générationelle", Communication aux XXèmes Journées de l'AES, L'Harmattan, Paris.

Fondazione Giacomo Brodolini, (1998), "Un modello per la previsione dell'offerta di lavoro, progetto strategico "Disoccupazione e basso livello di attività in Italia: cause specifiche e rimedi adeguati"" , ISTAT, Rome.

Fondazione Giacomo Brodolini, (1999), "Un modello per la previsione della domanda di lavoro e di professioni su base settoriale". Sintesi del rapporto di ricerca, Rome.

Fondeur Y., Lefresne F., (1999), "Les jeunes sur le marché du travail, une comparaison européenne", *Revue de l'IRES*, 31 (2).

Garrido, L., (1991), "*Prospectiva de las ocupaciones y la formación en la España de los noventa*", Ministerio de Economía y Hacienda, Madrid.

Galtier B., (1996), "Gérer la main d'œuvre des pratiques différenciées en renouvellement", *Economie et Statistique*, 298, pp. 45-70.

Gamel C., (2000), "Le diplôme, un 'signal' en voie de dépréciation? Le modèle de Spence réexaminé", *Revue d'économie politique*, 110 (1) Jan-Feb, pp. 54-84.

Gauron A., (2000), "Formation tout au long de la vie", Rapport du Conseil d'Analyse économique 22, *La documentation française*, 165 pp.

Giffard, A., Guegnard, C. (1999), "Forecasting method for qualification and training needs in France", *in* National Observatory of VET and Labour Market: Lessons from the Western European Experience, pp. 55-74, Prague.

Green, A., Steedman, H., (1997), "Into the twenty first century: An assessment of British skill profiles and prospects", Centre for Economic Performance, Special Report.

Green, F., McIntosh, S., Vignoles, A., (1999), "*Over-education and skills –Clarifying the concepts*", Centre for Economic Performance, DP 0435.

Halsey A.H., (1982) "The Decline of Donnish Dominion?" *Oxford Review of Education*. 8 (3), p. 215-229.

Handl, J (1996), "Hat sich die berufliche Wertigkeit der Bildungsabschlüsse in den achtziger Jahren verringert? Eine Analyse der abhängig erwerbstätigen, deutschen Berufsanfänger auf der Basis von Mikrozensusergebnissen". *Kölner Zeitschrift für Soziologie und Sozialpsychologie* 48, pp. 249-273.

Hannan D.F., Werquin P., (1999) "Education and labour market change: The dynamics of Education to Work Transitions in Europe", Session C of the European Socio-Economic Research Conference, Brussels, 23-29 april

Hartog J., (2000), "Human Capital as an Instrument of Analysis for the Economics of Education", *European Journal of Education*, 35 (1), pp. 7-20.

Haskel, J., Holt, R., (1999), "Anticipating future skill needs: Can it be done? Does it need to be done?", Skills Task Force, Research Paper, n° 1.

IAB (1999), (Institut für Arbeitsmarkt- und Berufsforschung), Kurzbericht, n° 9, 26 August.

Joutard P., Thelot C., (1999), "*Réussir l'école. Pour une politique éducative*", Le Seuil, Paris.

Lancaster K., (1966), "A new approach to consumer theory", *Journal of Political Theory*, 74 (2), pp. 132-157.

Lene A., (1998), "La production d'adaptabilité: stratégies d'entreprise et compétences transversales", ed. Stanckiewicz, L'Harmattan, Paris.

Maillart,F., Prokovas, N. et.al. (1999), "Les chemins de la prospective au travers des métiers de l'informatique". Conclusions of the 12 January 1999 session of the working group "Prospective des métiers et des qualifications". Commissariat général du Plan, Paris, July,

Mallet L. *et al.*, (1997), "Diplômes, compétence et marchés du travail en Europe", *Revue Européenne de Formation Professionnelle*, 12, 1997.

Mansi, C., (1995), "*Identification Problems in the Social Sciences*", Harvard University Press, Cambridge MA.

Martín Moreno, J., de Miguel, A., (1979), "*Universidad, fábrica de parados*", Fundación Juan March / Ariel, Barcelona.

Martinelli D., (2000), "Accès à la position de cadre des sortants de génération 92", *Note Génération 92*, n° 5, CEREQ.

Mason, G., (1999), "*Graduate utilisation and the quality of higher education in the UK*", National Institute of Economic and Social Research, DP 158.

Mason, G., (1996), "Graduate utilisation in British industry: The initial impact of mass higher education", *National Institute Economic Review*, 156, pp. 93-103.

Möbus M., (2000), "L'encadrement intermédiaire dans l'industrie. Quelles formes de renouvellement en Allemagne, en France et au Royaume Uni?", *Bref Cereq n° 170*, December.

OECD, (1999), "Education of Adult Workers in the OECD Countries: Measurement and Analysis", *Employment Outlook*, June.

OECD, (2000), "*Information in the Information Age: Final Report of the International Adult Literacy Survey*".

Parellada, M., Sáez, F., Sanromà, E., Torres, C., (1999), "*La formación continua en las empresas españolas y el papel de las universidades*", Civitas, Madrid.

Planas J., Giret, J-F., Sala, G., Vincens J. (2001), "The skills Market: Dynamics and Regulation", in Descy P., Tessaring M. (eds.) "Training in Europe. Second report on vocational training research in Europe 2000. Background report", Cedefop Reference Series, Office for Official Publications of the European Communities, Vol. 2, pp. 313-381.

Planas J., Giret, J-F., Sala, G., Vincens J., (2000), "Le marché de la compétence: dynamique et régulation", *Cahiers du Lirhe*, 6,March.

Planas J., Plassard J.M., (2000), "L'investissement en formation initiale comme préalable aux investissements tout au long de la vie", in *Efficacité versus Equité en Economie Sociale*, XXèmes Journées de l'AES, L'Harmattan, Paris.

Planas J. (1990), "Formal education, informal education and training activities in the integration of young people into working life", *Vocational Training European Journal*, 1990 (1), pp. 26-32.

Plassard J.M., Pluchard T. (1997), "Méthodologie pour une prospective d'emploi et de qualification", *Travail et emploi*, 71, pp. 65-82.

Prost A. (1992), "*L'enseignement s'est-il démocratisé ?*", PUF, Paris.

Prost A. (1992), "*Education, société et politique. Une histoire de l'enseignement en France, de 1945 à nos jours*", Seuil, Paris.

Reinberg, A., (1999), "Der qualifikatorische Strukturwandel auf dem deutschen Arbeitsmarkt - Entwicklungen, Perspektiven und Bestimmungsgründe", *Mittaß*, 4, pp. 434-447.

Scazzocchio, B., (1998), "L'analisi dei fabbisogni professionali e di competenze in Italia alla luce dell'esperienza nei paesi dell'Unione Europea", Lavoro e Relazioni Industriali, n° 1, janvier-juin.

Spence M., (1973), "Job Market Signaling", *Quarterly Journal of Economics*, 87 (3): 355-374. Quoted in *Skills for All. Research report from the National Skills Task Force*, London: Department for Education and Skills, 2000.

Spence M., (1974), "*Market Signaling: Informational Transfer in Hiring and Related Screening Processes*", Harvard University Press, Cambridge MA.

Stankiewicz F., (1998), "*Travail, compétence et adaptabilité*", L'Harmattan, Paris.

Stankiewicz F., (1999), "*Economie des ressources humaines*", La Découverte, Paris.

Stankiewicz F., (2000) "Future prospects of graduates and qualifications in the labour market", Working paper, Education Expansion, Employment and Labour Markets Seminar, Toulouse, 9-10 November.

Steiner V., Lauer C., (2000), "Private Erträge von Bildungsinvestitionen in Deutschland". Discussion paper, Centre for European Economic Research (ZEW), Mannheim.

Svimez, (1961), "*Mutamenti della struttura professionale e ruolo della scuola. Previsioni per il prossimo quindicennio*", Giuffré editore, Rome.

Tessaring M. (ed.), (1998), "*Training for a changing society*". Cedefop, Thessaloniki.

Tessaring, M., (1994), "Indikatoren der Akademikerbeschäftigung", in Konegen-Grenier, C., Schlaffke, W., (eds.), *Akademikerbeschäftigung und Akademikerbedarf*, Deutscher Instituts-Verlag, p. 38 ff.

Tessaring, M., (1998), "The Future of Work and Skills – Visions, Trends and Forecasts" in Vocational Education and Training, the European Research Field, Background Report, Cedefop, Vol. 1, pp. 271-317.

Thelot C., Vallet L.A., (2000), "La réduction des inégalités sociales devant l'école depuis le début du siècle", *Economie et Statistiques*, 334, pp. 3-32.

Topiol-Bensaid, A, (1996), "Présentation du modèle FLIP-FLAP", DARES. Working paper, Unioncamere, Il sistema informativo Excelsior: la metodologia utilizzata, Rome.

Vincens J., (2001), "Expérience professionnelle et formation", Lirhe, Toulouse, October.

Vinokur A. (1995), "Réflexions sur l'économie du diplôme", *Formation et emploi*, 52, pp. 151-183.

Vinokur A., (1998), "Global and Local Tendencies in the Restructuring of Educational Systems", TACIS, EDRUS, Education Management in Russia, Research Seminar, Moscow, 15-19 December.

Weidig, I., Hofer, P., Wolff, H., (1996), "Arbeitslandschaft 2010 nach Tätigkeiten und Tätigkeitsniveaus". Beiträge zur Arbeitsmarkt- und Berufsforschung, BeitrAB 227.

Wilson, R., (2000), "*Projection of Occupations and Qualifications*", Institute for Employment Research, University of Warwick.

Annexes

ANNEX 1

1.1. Grid used to compare national qualifications nomenclatures

- **1a.** No qualifications or compulsory education not completed
- **1b.** Compulsory education completed or certificate of primary education
- **2.** Certificate of secondary education, first level
- **3.** Certificate of vocational education
- **4.** Certificate of general or vocational/technological education, second level (university entrance)
- **5.** Higher education (including vocational courses beyond the first level of vocational education, such as Meister in Germany)

1a comprises: in the UK 'no qualifications'; in France 'sans diplôme'; in Italy primary school certificate and 'no qualifications' (grouped together in the statistics); in Germany 'no qualifications' including no reply (relatively numerous from 1991, see Haas/Lutz 1999); and in Spain 'sin estudios';

1b comprises: in France CEP, in Spain Primaris; in Germany Hauptschule without certificate of vocational education;

2 comprises: in the UK O-level, CSE and GCSE; in France BEPC; in Germany Realschule, Fachhochschulreife and *Abitur* (without vocational education qualifications, which are extremely rare); in Italy Scuola Media certificates; and in Spain Bachillerato Elemental and the upper cycle of EGB;

3 comprises: in the UK "others'", Trade Apprenticeship, City & Guilds, ONC/OND, NVQ 2/3; in France CAP, BEP; in Germany apprenticeships and Berufsfachschule (BFS); in Italy Scuola Professionale certificates; and in Spain FP;

4 comprises: in the UK A-level; in France baccalauréats; in Germany *Abitur* and Fachhochschulreife; in Italy Maturità, Scuola Tecnica and Magistero certificates; in Spain Bachillerato Superior, BUP and COU;

5 comprises: in the UK university degrees, HNC/HND, teaching and nursing qualifications; in France "licences" and above, higher bac+2; in Germany university and Fachhochschule qualifications, Meister and Techniker; in Italy university qualifications; and in Spain short and long university course qualifications.

NB: Illustration of allocation of qualifications to cats. (Germany):

	Certificate of vocational education obtained?	
Certificate of general education obtained	**No or no reply**	**Yes**
No certificate of general education or no reply	Cat.: 1a	Cat.: 3
Hauptschule	Cat.: 1b	Cat.: 3
Realschule (Mittlere Reife)	Cat.: 2	Cat.: 3
Fachhochschulreife	Cat.: 2	Cat.: 3
Abitur	Cat.: 2	Cat.: 3

1.2. Qualifications structure of generations studied (%)

Born 1940	Germany	UK	France	Italy	Spain
1a. no qualifications	9	39	28	56	32
1b. certificate of compulsory education	24	–	27	–	57
2. lower secondary	1	9	6	23	–
3. vocational education	51	34	20	3	3
4. upper secondary	–	3	7	12	2
5. higher education	14	16	12	5	6

Born 1950	Germany	UK	France	Italy	Spain
1a.	8	24	18	31	12
1b.	14	–	18	–	63
2.	2	12	7	34	–
3.	53	38	30	5	5
4.	–	4	10	20	8
5.	21	22	17	10	13

BEST COPY AVAILABLE

Born 1960	Germany	UK	France	Italy	Spain
1a.	9	16	23	10	4
1b.	11	-	4	-	54
2	3	23	9	43	-
3	56	30	31	7	14
4	-	7	12	30	12
5	22	25	21	10	16

Born c. 1970	Germany (65-66)	UK (73-74)	France (1972)	Italy (68-72)	Spain (1972)
1a	8	11	16	6	2
1b	9	-	1	-	38
2	3	23	5	41	-
3	58	31	23	7	20
4	-	9	18	39	18
5	20	26	37	7	23

Generations studied

Generation born around 1938:

this is the oldest cohort (approx. 60 years of age in 2000) still working and observable in the most recent national Labour Force Survey.

Generation born 1950:

this is the last cohort to go through the school system before the major changes introduced in the 1960s and '70s.

Generation born 1960:

this is the first cohort to benefit from the major changes introduced in the 1960s in most countries (in Spain, major changes were introduced later, in the 1970s).

Generation born circa 1970:

the last cohort to have completed initial education and observable in the most recent Labour Force Survey (between 25 and 30 years of age).

BEST COPY AVAILABLE

Sources

1937/1938/1939

France	*Enquête-Emploi* 1998, *Age* 60, *Born* 1938;
Germany	*Mikrozensus* 1995, *Generation aged* 57-58 *years in* 1995 *and therefore born in* 1937 *and* 1938;
Italy	*Labour Force Survey* 1997, *Age* 59-55, *Born* 1938-1942;
Spain	*Labour Force Survey* 1996, *Age* 59, *Born* 1937;
United Kingdom	*Labour Force Survey* 1998, *Age* 59 *and* 58, *Born* 1939 *and* 1940.

1950

France	*Enquête-Emploi* 1998, *Age* 48, *Born* 1950;
Germany	*Mikrozensus* 1995, *Generation aged* 46 *and* 45 *years in* 1995 *and therefore born in* 1949 *and* 1950;
Italy	*Labour Force Survey* 1997, *Age* 49-45, *Born* 1948-1952;
Spain	*Labour Force Survey* 1996, *Age* 46, *Born* 1950;
United Kingdom	*Labour Force Survey* 1998, *Age* 49 *and* 48, *Born* 1949 *and* 1950.

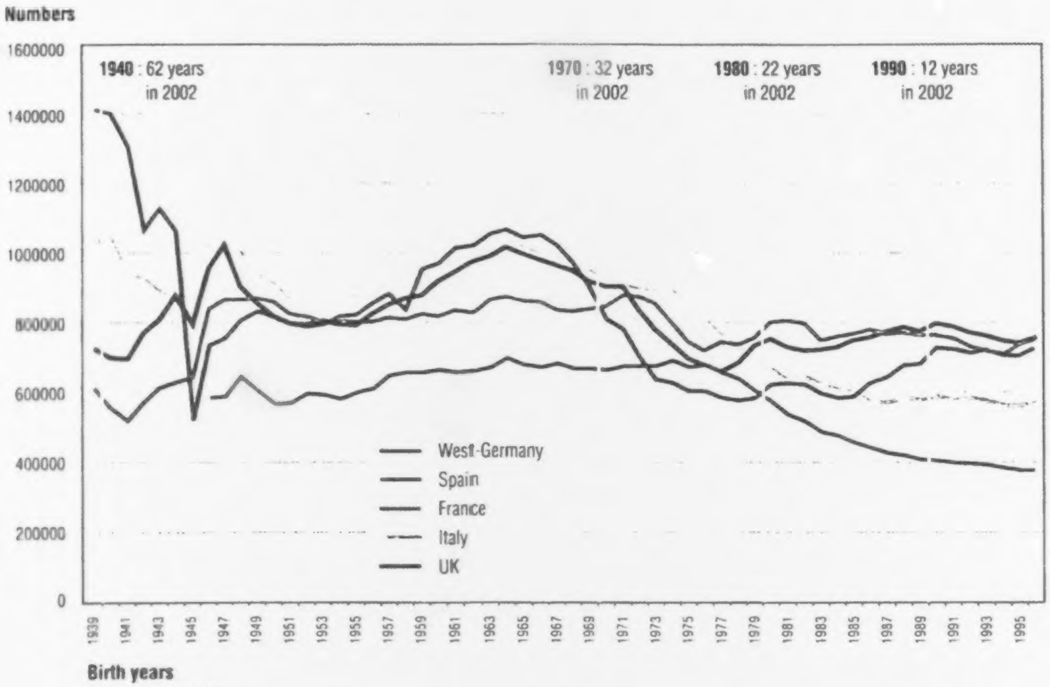
1960

France	*Enquête-Emploi* 1998, *Age* 38, *Born* 1960;
Germany	*Mikrozensus 1995, Generation aged* 38/39 *years in* 1995 *and therefore born in* 1958/57;
Italy	*Labour Force Survey* 1997, *Age* 39-35, *Born* 1958-1962;
Spain	*Labour Force Survey* 1996, *Age* 35, *Born* 1961;
United Kingdom	*Labour Force Survey* 1998, *Age* 39 *and* 38, *Born* 1959 *and* 1960.

1973

France	*Enquête-Emploi* 1998, *Age* 26, *Born* 1972;
Germany	*Mikrozensus* 1995, *Generation aged* 30 *and* 29 *years in* 1995 *and therefore born in* 1965 *and* 1966;
Italy	*Labour Force Survey* 1997, *Age* 29-25, *Born* 1968-1972;
Spain	*Labour Force Survey* 1996, *Age* 24, *Born* 1972;
United Kingdom	*Labour Force Survey* 1998, *Age* 25 *and* 24, *Born* 1973 *and* 1974.

1.3. Demography of European project countries

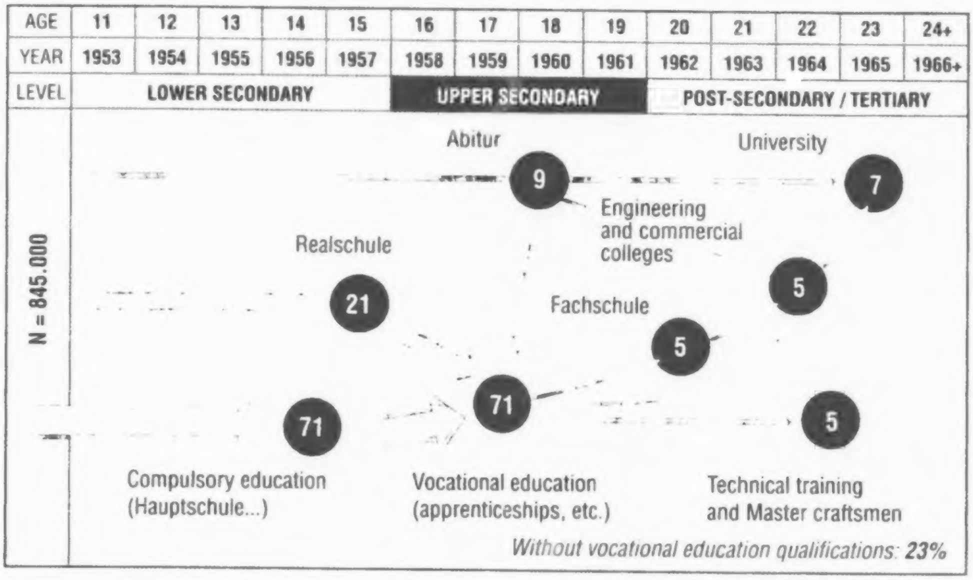


Source: national data

1.4. Graphs of the German, Spanish and French education systems

German Education System

1942 generation

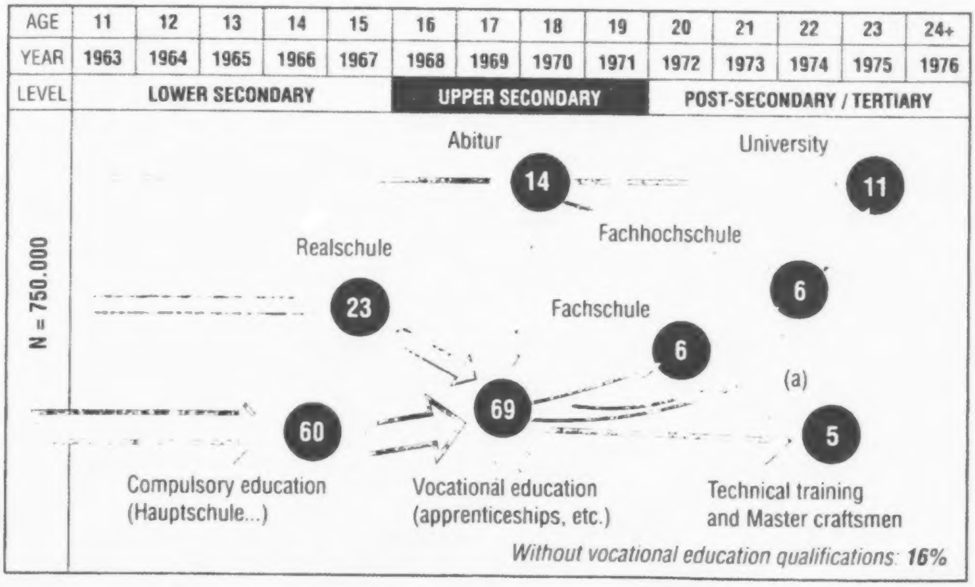


AGE	11	12	13	14	15	16	17	18	19	20	21	22	23	24+
YEAR	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966+
LEVEL	LOWER SECONDARY					UPPER SECONDARY				POST-SECONDARY / TERTIARY				

N = 845.000
Abitur
9
University
7
Engineering and commercial colleges
5
Realschule
21
Fachschule
5
71
71
5
Compulsory education (Hauptschule...)
Vocational education (apprenticeships, etc.)
Technical training and Master craftsmen

Without vocational education qualifications: ***23%***

1952 generation



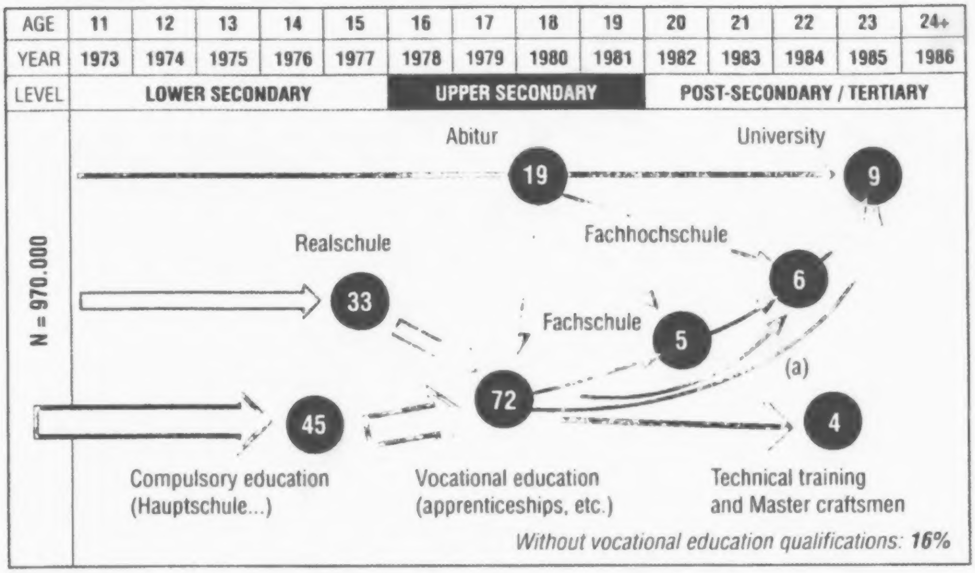
AGE	11	12	13	14	15	16	17	18	19	20	21	22	23	24+
YEAR	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
LEVEL	LOWER SECONDARY					UPPER SECONDARY				POST-SECONDARY / TERTIARY				

N = 750.000
Abitur
14
University
11
Fachhochschule
6
Realschule
23
Fachschule
6
(a)
60
69
5
Compulsory education (Hauptschule...)
Vocational education (apprenticeships, etc.)
Technical training and Master craftsmen

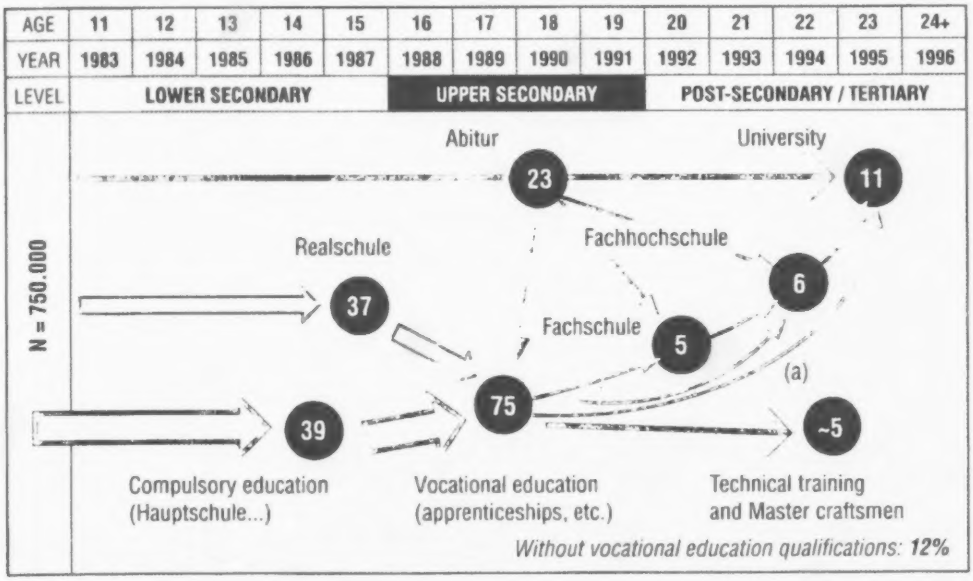
Without vocational education qualifications: ***16%***

BEST COPY AVAILABLE

1962 generation


AGE
11
12
13
14
15
16
17
18
19
20
21
22
23
24+
YEAR
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
LEVEL
LOWER SECONDARY
UPPER SECONDARY
POST-SECONDARY / TERTIARY
N = 970.000
Abitur
19
University
9
Realschule
33
Fachhochschule
6
Fachschule
5
(a)
72
45
4
Compulsory education (Hauptschule...)
Vocational education (apprenticeships, etc.)
Technical training and Master craftsmen
Without vocational education qualifications: 16%

1972 generation

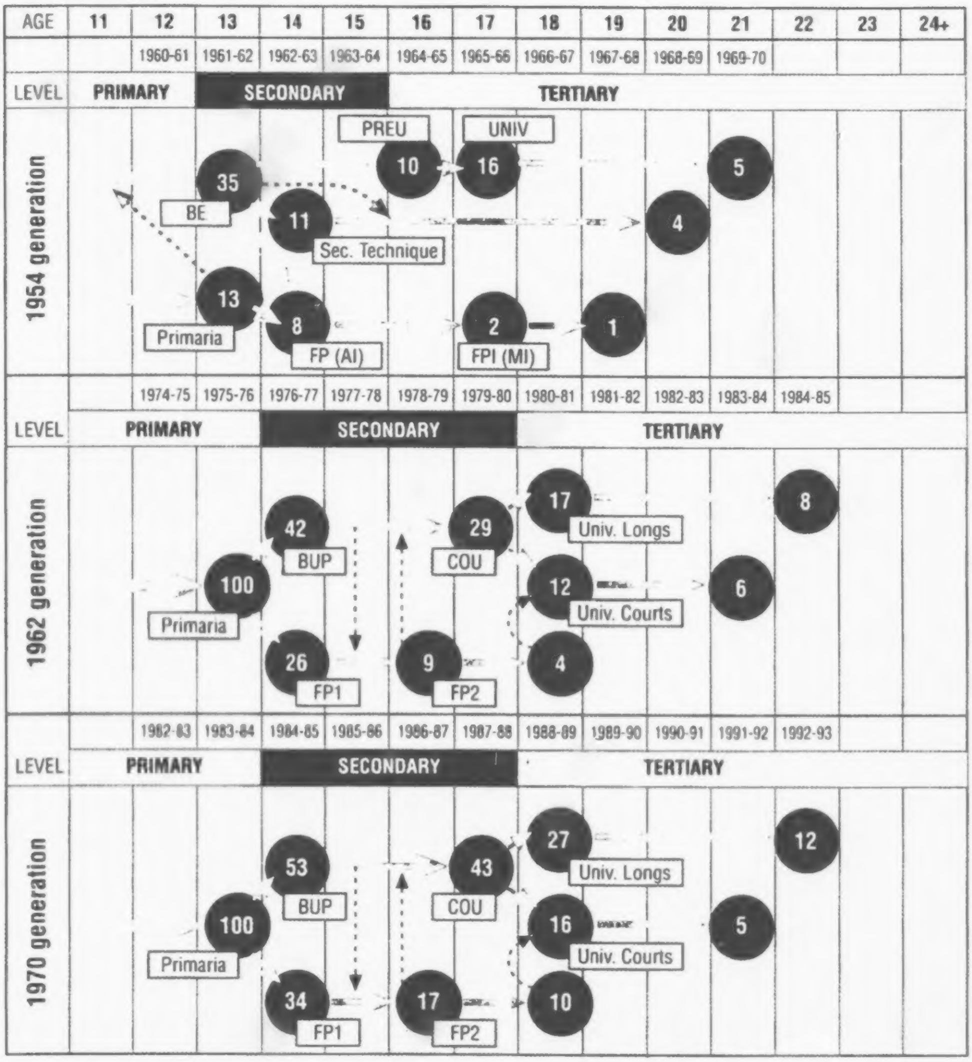

AGE
11
12
13
14
15
16
17
18
19
20
21
22
23
24+
YEAR
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
LEVEL
LOWER SECONDARY
UPPER SECONDARY
POST-SECONDARY / TERTIARY
N = 750.000
Abitur
23
University
11
Realschule
37
Fachhochschule
6
Fachschule
5
(a)
75
39
~5
Compulsory education (Hauptschule...)
Vocational education (apprenticeships, etc.)
Technical training and Master craftsmen
Without vocational education qualifications: 12%

Reading note: the percentages shown in circles indicate the proportion of each generation regarded as having reached that "orientation point" or "final point" of the system. The width of an arrow indicates the number of persons who have successfully completed that track (minimum number for inclusion of an arrow: 10,000 individuals in a generation).

(a) Post-apprenticeship entry to higher education requires a certificate of general education (Fachhochschulreife or *Abitur*, depending on the course). For example, approx. 10% of the 1980 generation obtained that qualification after initial vocational training. Thus, in total, approx. 35% of that generation a qualification granting entry to higher education (Fachhochschule, university). Sources: 1942 to 1962 generations: own calculations from BIBB/IAB panel and Mikrozensus; 1972 and 1980 generations: Bildungsgesamtrechnung (BGR).

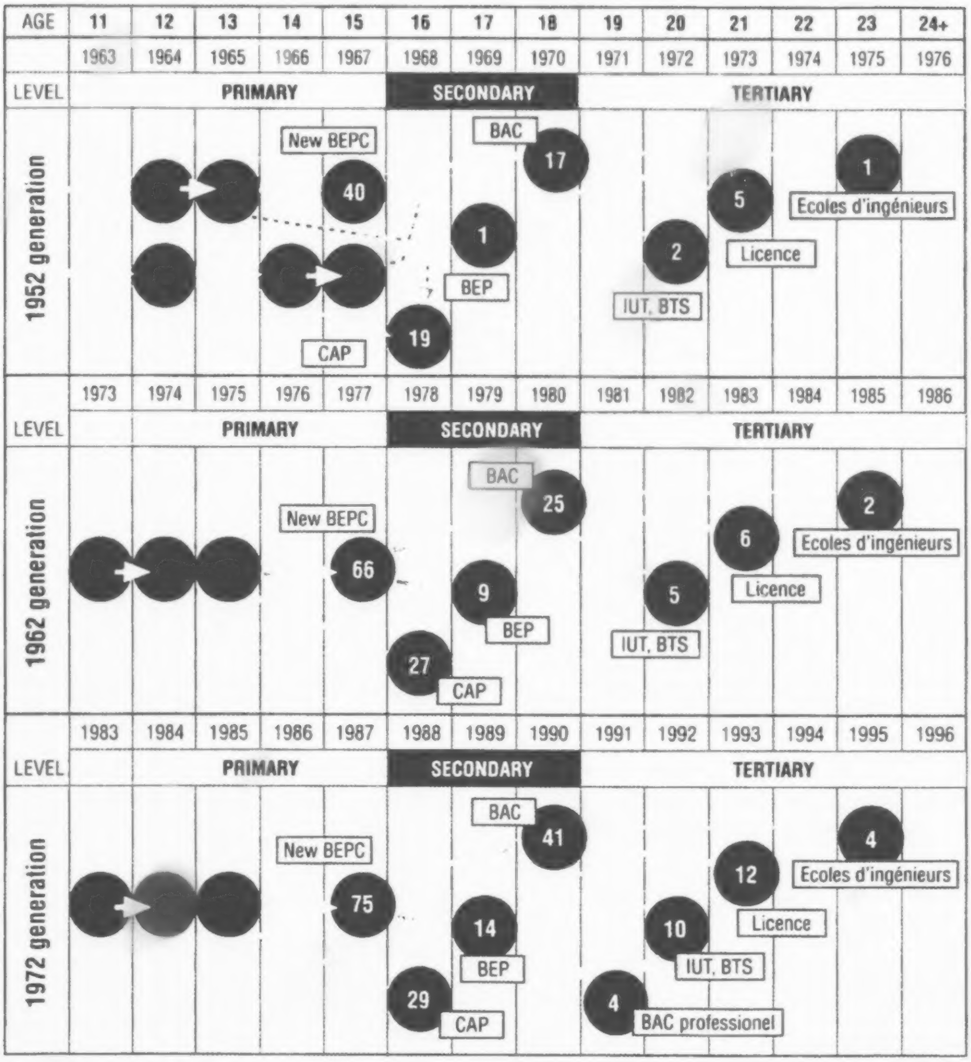
BEST COPY AVAILABLE

Spanish Education System


AGE
11
12
13
14
15
16
17
18
19
20
21
22
23
24+
1960-61
1961-62
1962-63
1963-64
1964-65
1965-66
1966-67
1967-68
1968-69
1969-70
LEVEL
PRIMARY
SECONDARY
TERTIARY
1954 generation
PREU
UNIV
35
BE
10
16
5
11
Sec. Technique
4
13
Primaria
8
FP (AI)
2
FPI (MI)
1
1974-75
1975-76
1976-77
1977-78
1978-79
1979-80
1980-81
1981-82
1982-83
1983-84
1984-85
LEVEL
PRIMARY
SECONDARY
TERTIARY
1962 generation
42
BUP
29
COU
17
Univ. Longs
8
100
Primaria
12
Univ. Courts
6
26
FP1
9
FP2
4
1982-83
1983-84
1984-85
1985-86
1986-87
1987-88
1988-89
1989-90
1990-91
1991-92
1992-93
LEVEL
PRIMARY
SECONDARY
TERTIARY
1970 generation
53
BUP
43
COU
27
Univ. Longs
12
100
Primaria
16
Univ. Courts
5
34
FP1
17
FP2
10

BEST COPY AVAILABLE

French Education System


AGE
11
12
13
14
15
16
17
18
19
20
21
22
23
24+
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
LEVEL
PRIMARY
SECONDARY
TERTIARY
1952 generation
New BEPC
40
BAC
17
1
BEP
19
CAP
2
IUT, BTS
5
Licence
1
Ecoles d'ingénieurs
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
LEVEL
PRIMARY
SECONDARY
TERTIARY
1962 generation
New BEPC
66
BAC
25
9
BEP
27
CAP
5
IUT, BTS
6
Licence
2
Ecoles d'ingénieurs
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
LEVEL
PRIMARY
SECONDARY
TERTIARY
1972 generation
New BEPC
75
BAC
41
14
BEP
29
CAP
4
BAC professionel
10
IUT, BTS
12
Licence
4
Ecoles d'ingénieurs

BEST COPY AVAILABLE

ANNEX 2

2.1. Four models (Béduwé, Giret 1999, p. 14)

Let X^{0}_{pda} be the number of persons in occupation *p*, of age *a* and qualifications level *d* at time *t0*.

Let X^{t}_{pda} be the number of persons in occupation *p*, of age *a* and qualifications level *d* at time *t*.

Let X^{0}_{da} and X^{t}_{da}, be the size of the supply of qualifications of level *d* and age *a*, at times *t0* and *t* respectively.

Let X^{0}_{p} and X^{t}_{p}, be the numbers of persons in occupation *p* at times *t0* and *t* respectively.

Let $X^{e_1}_{pda}$, $X^{e_2}_{pda}$, $X^{e_3}_{pda}$, X^{ras}_{pda} be the successive estimates of X^{t}_{pda} in the different models.

Observed variation model

$$X^{e_1}_{pda} = \alpha X^{0}_{pda} + \beta_1 * \tau_{da} + \varepsilon_1$$

with *a* determining coefficient that shall be called R^2 *observed.*

Supply model

$$X^{e_2}_{pda} = \alpha_1 X^{0}_{pda} + \beta_1 X^{0}_{pda} * \tau_{da} + \varepsilon_1$$

where τ_{da} represents the rate of increase in the supply of qualified persons *d* in age group *a*.

or $X^{e_2}_{pda} = \alpha_1 X^{0}_{pda} + \beta_1 X^{0}_{pda} * \left(\dfrac{X^{t}_{da} - X^{0}_{da}}{X^{0}_{da}}\right) + \varepsilon_1$

with *a* determining coefficient that shall be called R^2 *supply.*

Demand model

$$X^{e_3}_{pda} = \alpha_2 X^{0}_{pda} + \beta_2 X^{0}_{pda} * \lambda_p + \varepsilon_2$$

where λ_p represents the rate of increase in occupation *p*.

$$X^{e_3}_{pda} = \alpha_2 X^{0}_{pda} + \beta_2 X^{0}_{pda} * \left(\frac{X^{t}_{p} - X^{0}_{p}}{X^{0}_{p}}\right) + \varepsilon_1$$

or $X^{e_3}_{pda} = \alpha_2 X^0_{pda} + \beta_2 Z^0_{pda} + \varepsilon_2$

with *a* determining coefficient that shall be called *R^2 demand.*

Simultaneous model

$X^{e_3}_{pda} = f\,(X^0_{pda}, \tau_{da}, \lambda_p)$

This model was tested by means of the RAS method used in forecasting models, and especially in planning (Evans and Lindley, 1973). RAS is an algorithm for optimising systems of non-linear multiple equations which uses the margins of the matrix P•(D,A) to simulate a new occupation-age-qualification structure and may be linearised according to some hypotheses (Borghans and Heijke, 1996).

2.2. Two ways of reading the supply model

(Béduwé, January 2000)

2.2.1. The increase in the number of graduates (i.e., persons with qualifications) within each occupation must – at least – keep pace with the rise in the output of graduates by the initial education system. Our initial hypothesis therefore was that the way in which constantly increasing numbers of graduates spread within the employment system should be studied using a model that took account of changes over time in the production of graduates, i.e., generation after generation.

The model as first written (Béduwé, Espinasse, 1995) stipulates that the increase in certification in each age group $(X'_{da} - X_{da})$ is found in each occupation using that age group and that level of qualifications. In other words, by defining

- the persons initially employed at t as X_{pda}, X_{da}, X^p
- the persons finally employed at t' as $X'_{pda}, X'_{da}, X^{p'}$
- and the relative increase in certification between *t* and *t´* as $(X'_{da} - X_{da}) / X_{da}$, an estimate of X'_{pda} may be written in the form

  $X_{pda} + X_{pda} * (X'_{da} - X_{da}) / X_{da}$ (1)

Whence the model to be tested $X'_{pda} = \alpha X_{pda} + \beta X_{pda} * (X'_{da} - X_{da}) / X_{da} + \varepsilon$
or structured as $X'_{pda} / X^{p'} = \alpha X_{pda} / X^p + \beta X_{pda} / X^p * (X'_{da} - X_{da}) / X_{da} + \varepsilon$

This is the so-called "supply" model because it takes into account the changes in the quantity of graduates delivered by the education system between t and t' (or Espinasse in our jargon). Supply is understood here to mean the supply of graduates within the active population.

2.2.2. $b_{pad} = X_{pda} / X^{p}$ is the skills structure of an occupation

That is, the proportion of occupation p of age a with qualifications d, with the sum by occupation equal to 100, and horizontal percentages of the matrix (P,D∗A).

The supply model states that the skills structure of an occupation has evolved (more or less) in proportion to the increase in the supply.

2.2.3. Let us return to formula (1). If the supply model were true at 100%, it could be written in terms of strict equality as:

$$X'_{pda} = X_{pda} + X_{pda} * (X'_{da} - X_{da}) / X_{da}$$

That is, $$X'_{pda} / X'_{da} = X_{pda} / X_{da} \qquad (2)$$

if $$\alpha_{pda} = X_{pda} / X_{da}, \text{ then } \alpha_{pad} = \alpha'_{pda}$$

α_{pad} represents recruitment for occupation P from the "skills" group $d * a$. That is, the proportion of individuals of age a with qualifications d who are employed in P, and vertical percentages of matrix (P,D∗A).

If model (M_1) were true at 100% , there would then be a pure supply-side effect, and everything would occur as though companies maintained a fixed rate of recruitment ($\alpha_{pda} = X_{pda} / X_{da}$) from age group a with level of qualifications d in order to sustain occupation p, but from an active population in which the relative quantities of qualifications of level d in each age group a were changing.

2.3. Cumulative table of international results for the supply-side effect

	USA	Spain		France			Germany				Italy		Netherlands.			UK
Population & period	**88-98**	**82-90**	**87-96**	**82-90**	**87-95**	**90-95**	**78-85**	**85-93**	**78-93**	**79-91**	**81-91**	**91-96**	**73-85**	**85-92**	**73-92**	**84-94**
Results, working pop.																
(1) Observed variation	83.1	85.9	83.2	80.0	76.7	87.8	86.1	85.5	64.9	72.9	48.1	82.4	38.5	81.0	24.9	59.9
(2) Variation in skills supply	97.2	91.7	93.0	90.1	90.7	93.7	95.3	95.3	89.9	91.4	56.6	94.7	54.3	87.6	54.0	88.1
(3) Variation in working pop.	85.8	87.9	87.2	83.6	80.5	90.2	87.3	87.8	69.7	79.9	70.4	86.5	70.9	85.4	48.2	70.7
(4) Simultaneous variation	97.9	93.8	96.5	95.3	96.1	97.7	95.6	96.6	91.8	93.2	91.3	97.8	78.3	94.0	78.5	94.3
Results, structure																
(5) Observed variation	82.4	84.7	74.8	82.1	73.3	81.7	83.7	86.2	64.8	69.6	63.3	77.1	42.0	67.7	29.3	72.3
(6) Variation in skills supply	96.9	89.2	91.2	92.5	87.5	87.9	92.06	94.3	85.4	87.2	80.0	86.6	61.4	71.8	60.0	93.1
(7) Variation in demand for skills	82.4	84.7	74.8	82.1	73.3	81.7	83.7	86.2	64.8	69.6	63.3	77.1	42.0	67.7	29.3	72.3
(8) Simultaneous variation	96.8	88.5	91.0	92.8	87.8	88.2	92.05	94.4	85.4	87.1	83.2	88.7	64.5	71.9	63.4	93.5
Results, supply (margin)																
(12) In nos. in working pop.		90.6	86.4	74.9	69.7	86.6	87.6	83.0	62.9	70.7	65.9	78.6	13.9	77.7	0.0	28.5

Sources

Italy	81, 91: Census	96: ISTAT Labour Force Survey
Netherlands	73, 85: Labour Market Survey collected by the Dutch Central Office of Statistics	92: Labour Force survey 1992
France	82, 90: Censuses	95: Enquête Emploi, INSEE
UK	84, 94: Labour Force Survey, spring	
Germany	79, 85/86, 91/92: BIBB and IAB skills and career surveys	
Spain	82, 87, 90, 96: Active population surveys, INE	
USA	88, 98: Current Population Survey (CPS) data files	

2.4. Data and variables used by the countries for salary analysis

	West Germany 1988-98	Spain 1980-90	France 1991-98	Italy 1993-98	United Kingdom 1993-99
Survey	SOEP – Sozioöko-nomisches Panel	Family budget surveys	Labour Force Surveys	Banca d'Italia family budget surveys	LFS – UK Labour Force Survey
n persons employed at beginning / end of period observed Remarks/limitations	3 588 4 050	12 360 9 921 Heads of family only	50 314 54 215	5 686 4 163	7 506 14 071 n in models including DF and RDP: 4 879 9 428
Nº of occupations	8	7	25	8	5
Style of classifica-tion of occupations	Horizontal classification into 4 fields of employment, sub-divided into 2 levels of skill-type	Vertical division into categories defined by level of skill-type	Hierarchical socio-occupational groups	Vertical division by status in company	Summary vertical division
Number of levels of education	7	7	7	5	7
Ages covered	18-64	NA	18-60	25-65	NA
Indicator of experience	Age - years of study 6 pre-school years	Age - years of study	Age - theoretical years of study	Age	Age

2.5a. Table of results of earnings function model for education as a whole (DIP)

	West Germany 1988-98		**Spain 1980-90**		**France 1991-98**		**Italy 1993-98**		**United Kingdom 1993-99**	
	(A)	**(B)**	**(A)**	**(B)**	**(A)**	**(B)**	**(A)**	**(B)**	**(A)**	**(B)**
Coefficient DIP										
At beginning of period	.096	.087	.065		.077			.009		.040
At end of period	.076	.062	.067		.073			.006		.043
Difference	**-.020** (1)	**-.025** (2)	.002	NA	**-.004** (1)	NA	NA	-.003	NA	.003
R^2 model beginning	.189	.221	.297		.359			.217		.454
R^2 model end	.187	.256	.277		.348			.163		.437

2.5b. Table of results of earnings function model for education broken down (DF and RDP)

	West Germany 1988-98		**Spain 1980-90**		**France 1991-98**		**Italy 1993-98**		**United Kingdom 1993-99**	
	(A)	**(B)**	**(A)**	**(B)**	**(A)**	**(B)**	**(A)**	**(B)**	**(A)**	**(B)**
Coefficient DF										
At beginning of period	.200	.755	.587	-.097	.770	.375	NA	.070	NA	.032
At end of period	.243	.778	.417	-.030	.630	.431	NA	.191	NA	.031
Difference	.043	.023	**-.170** (2)	.067	**-.140** (2)	.056	NA	**.122** (1)	NA	-.001
Coefficient RDP										
At beginning of period	.097	.097	.043	.052	.046	.039	NA	.009	NA	.010
At end of period	.071	.072	.056	.055	.050	.038	NA	.004	NA	.022
Difference	**-.026** (1)	**-.025** (1)	**.013** (1)	.003	**.004** (1)	-.001	NA	-.005	NA	.012
R^2 model beginning	.190	.222	.338	.390	.477	.551		.219		.454
R^2 model end	.202	.261	.235	.325	.454	.539		.167		.444

(A) *Version without variables PROF$_i$* – (B) *Version with variables PROF$_i$* – (1) $p < .05$ – (2) $p < .01$

EST COPY AVAILABLE

2.6. Additional work done on the supply-side effect (46)

Three EDEX project teams re-examined the results obtained in 1996-97 through the Cedefop project. Their purpose was to check the robustness of the supply-side effect by introducing a new typology of jobs.

In their re-examination, the Spanish, Italian and German teams replaced the variable "occupation" by a variable crossing "occupation" with "sector of economic activity". This was intended to allow for finer measurement of the evolution of structural demand, particularly among all those occupations crossing a number of sectors (managers, engineers, technicians, sales staff, administrators, secretaries, and so on). The hypothesis was that these occupations would have seen a rise in their skills structure as a result of the growing involvement of their members in sectors noted for their technological development, exposure to the world market, dealings with a more demanding clientele, "flat" organisation, etc. When this new variable was applied, the supply-side model proved to fit very well (47) in the three countries using it, confirming the existence of a "supply-side effect" in the evolution of the skills structures of the various job categories (see table below). A few remarks are in order:

In Spain, banking jobs display a particularly marked rise in level of education (Masjuan J. M., Sala G, Vivas J., 1999, p. 5). This finding contributed to the choice of banking as a field of investigation in Stage 3.

In Italy, differentiation by gender suggests that both models – supply and demand – are a much better fit in the case of women. This might be due to the gradual feminisation of the active population. The labour supply is heavily influenced by recent generations, which both contain more women and are more highly qualified (Ghignoni E., 2000, p. 9).

Differentiation by period, which was carried out in Germany, shows a consolidation of the supply-side effect during the 1980s. In the preceding period (the 1970s), the relative significance of this effect appeared weak, since it was dependent on the nomenclature of jobs used. The finding of consolidation confirms the results obtained in other sectors in Germany. (48)

---

(46) Written by J. Haas

(47) *Cf.* Annex 2.3 , "Synthesis" and "Methodological Aspects" tables of the analyses of the EDEX project with respect to the supply-side effect.

(48) E.g. Handl J., (1996): Hat sich die berufliche Wertigkeit der Bildungsabschlüsse in den achtziger Jahren verringert? Eine Analyse der abhängig erwerbstätigen, deutschen Berufsanfänger auf der Basis von Mikrozensusergebnissen. *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 48, pp. 249-273.

Table: **Fields of employment defined according to a typology crossing "occupation" with "economic sector"**

	Spain	Italy			West Germany			
Population (employed and seeking work)	**Age 16+**	**Age 15-65**			**Age 20-64**			
		Total	**Men**	**Women**	**Version I (*)**		**Version II (*)**	
Period	**1986-97**	**1993-98**	**1993-98**	**1993-98**	**1976-85**	**1985-95**	**1976-85**	**1985-95**
Results, working pop.								
(1) Observed variation	81.7	86.4	83.5	90.0	79	85	76	78
(2) Variation in skills supply	90.9	97.0	96.1	96.7	90	94	83	88
(3) Variation in working pop. (skills demand)	87.4	87.0	85.0	91.1	85	84	88	82
(4) Simultaneous variation	95.9	97.7	96.3	98.7	95	95	94	91
Results, structure								
(5) Observed variation	68.1	65.3	47.3	78.2	82	82	78	77
(6) Variation in skills supply	75.1	74.9	58.1	82.0	91	91	87	85
(7) Variation in demand for skills	68.1	65.3	47.3	78.2	82	82	78	77
(8) Simultaneous variation	74.7	75.9	59.4	83.6	91	91	88	85
Results, supply (margin)								
(12) In nos. in working pop.		99.3	99.6	98.1	95	98	90	96

(*) In the German contribution, two typology versions of the occupation-sector variable are employed. Differences between the two versions appear in the treatment of the economic sector aspect.

Version I first classifies the occupation of the job. The introduction of the economic sector component uses the empirical correlation of the occupation with the economic sector; the fact is used that many occupations are specific to certain sectors of the economy.

Version II does not subdivide according to the occupation principle, but according to the criterion of the typical qualification level of the occupation (information derived from the population census of 1970). For example, occupations that had a relatively large proportion of persons without formal qualifications in 1970 were categorised as low-skilled occupations. A total of 13 occupational categories were created, then crossed with 14 economic sectors. The small size of some resultant populations made it necessary to combine certain groups.

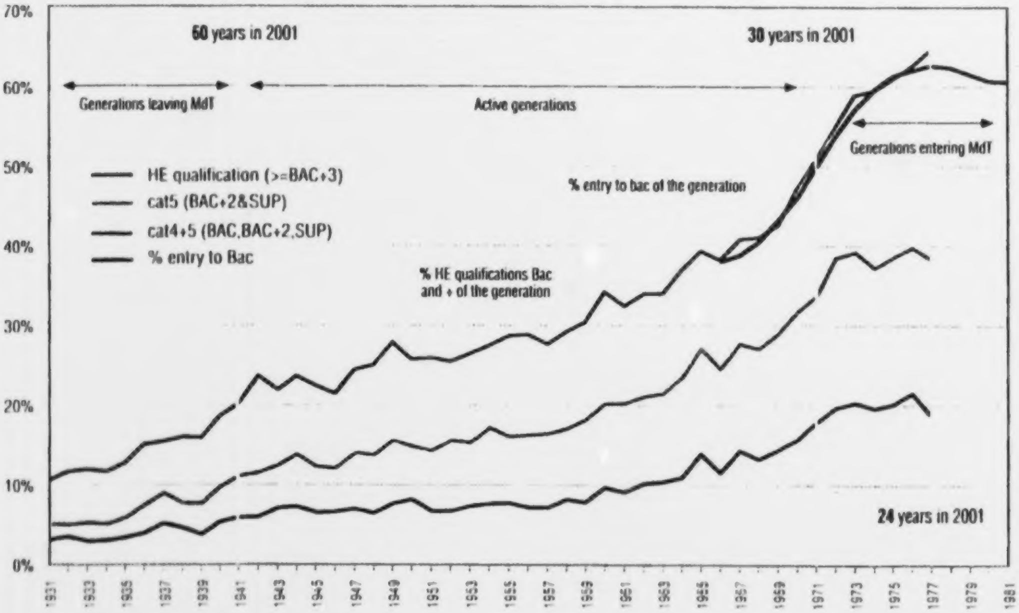
ANNEX 3

Evolution of qualifications structures among post-1970 generations

3.1. France: Evolution of educational expansion

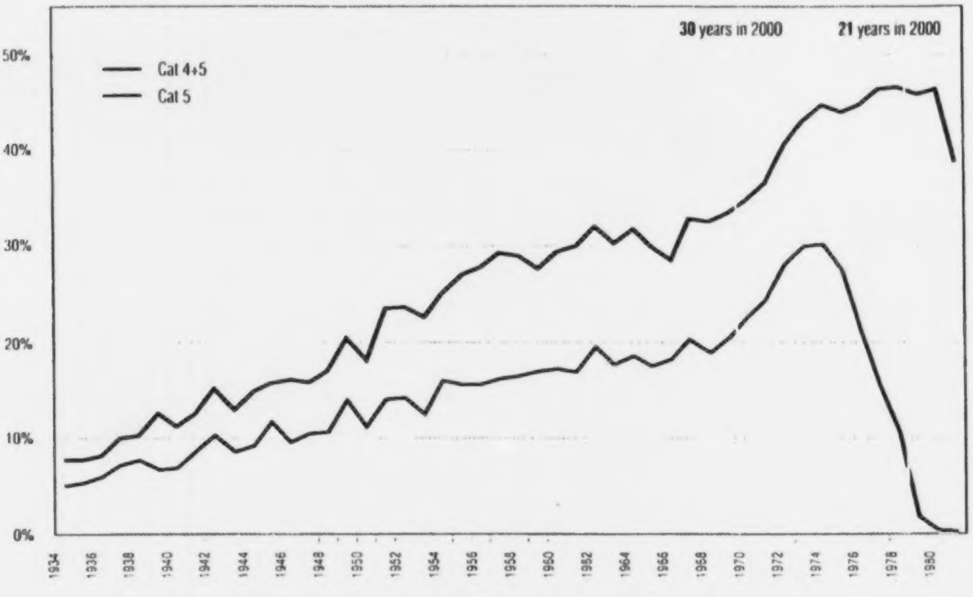
Higher education qualifications (cumulative %) in AP by year of birth, LFS 1976-2000.

% of entry to baccalauréat by generation since 1967, RRS, Ministry of National Education.

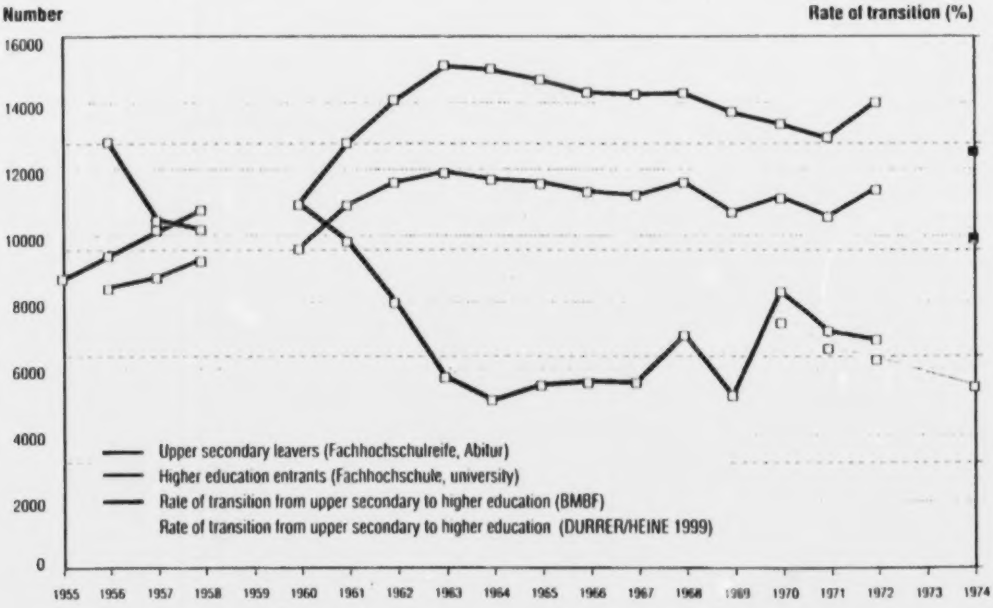


Source: Insee (EE78-2001) for HE graduates, Education Nationale for % entry to Bac

3.2. Spain: Qualifications structure of generations, population aged 16-65 years. LFS 2000

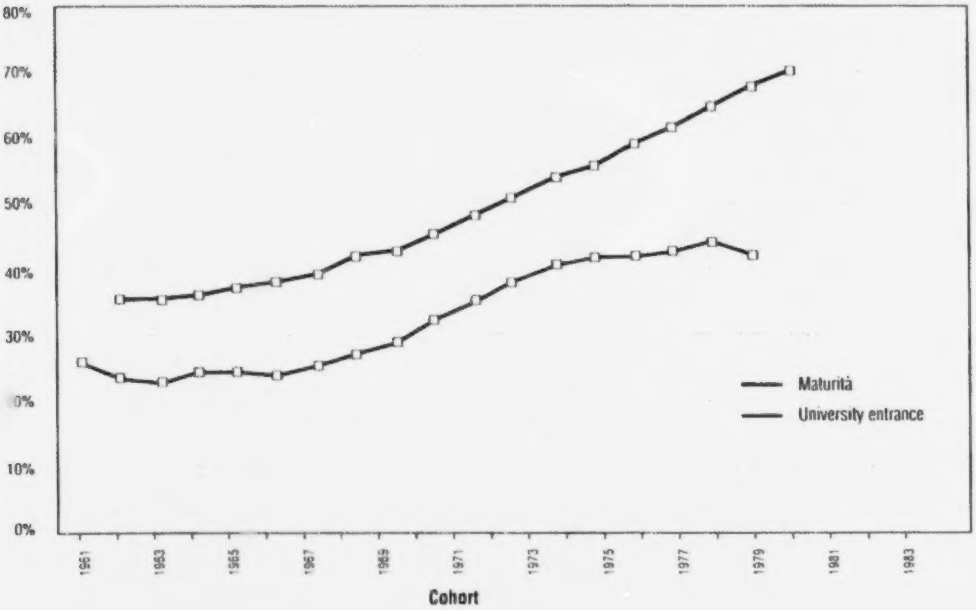


3.3. Germany: Rate of upper secondary completion

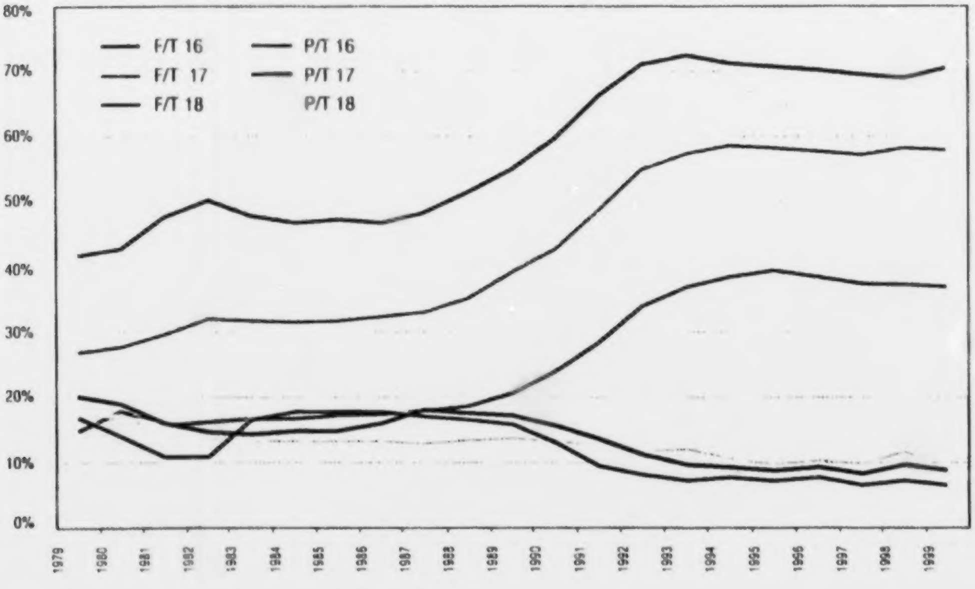


Panel I data (1956-1972 generations): Bundesministerium für Bildung und Forschung (BMBF), Grund- und Strukturdaten
Panel II data (size of 1974 generation): DURRER, F.; HEINE, C. (1999)
Panel II data (rate of transition of 1970-74 generations): DURRER, F.; HEINE, C. (1999)

3.4. Italy: Completion of upper secondary (Maturità) and university entrance



3.5. United Kingdom (England): Participation in full-time and past-time post-compulsory education and training, 1979-1999



Source: DfEE Statistical Bulletin 16/93, SFR 13/1999, SFR 28/2000

Cedefop (European Centre for the Development of Vocational Training)

EDEX
Educational expansion and labour market

A comparative study of five European countries – France, Germany, Italy, Spain and the United Kingdom – with special reference to the United States

Catherine Béduwé
Jordi Planas

Luxembourg:
Office for Official Publications of the European Communities

2003 – VI, 191 pp. – 17.5 x 25 cm

(Cedefop Reference series; 39 – ISSN 1608-7089)

ISBN 92-896-0201-5

Cat. No: TI-49-02-345-EN-C

Price (excluding VAT) in Luxembourg: EUR 25

No of publication: 3030 EN

This is the final report of the TSER project 'Educational expansion and labour markets' (EDEX) carried out in cooperation with British, French, German, Italian and Spanish teams. It analyses the long-term consequences of the rise in levels of education on access to employment and human resource management.

Taking a comparative approach, four major questions are addressed:
- What are the processes and factors leading to educational expansion?
- How are generations with increasing levels of qualification spread throughout the employment system, and with what private returns?
- How has this affected company organisation and management of human resources and what links have been established between skills supply and demand?
- What are the implications for national systems linking education to employment, and to what extent are countries converging or diverging?

The analyses provide a sound basis for understanding and shaping the links between education and employment, and thus between the supply of and demand for skills on labour markets.

Catherine Béduwé, Jordi Planas *(project coordinators)*
Manfred Tessaring *(Cedefop)*

EN

Educational expansion and labour market

A comparative study of five European countries – France, Germany, Italy, Spain and the United Kingdom – with special reference to the United States

CEDEFOP

European Centre for the
Development of Vocational Training

Europe 123, GR-570 01 Thessaloniki (Pylea)
Postal address: PO Box 22427, GR-551 02 Thessaloniki
Tel. (30) 23 10 49 01 11, Fax (30) 23 10 49 00 20
E-mail: info@cedefop.eu.int
Homepage: www.cedefop.eu.int
Interactive website: www.trainingvillage.gr

Price (excluding VAT) in Luxembourg: EUR 25

3030 EN

Publications Office
Publications.eu.int

ISBN 92-896-0201-5

9 789289 602013 >

04 05 16 11-49-02-345-EN-C

BEST COPY AVAILABLE

198

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

ERIC
Educational Resources Information Center

NOTICE

Reproduction Basis

☒ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").

EFF-089 (1/2003)